

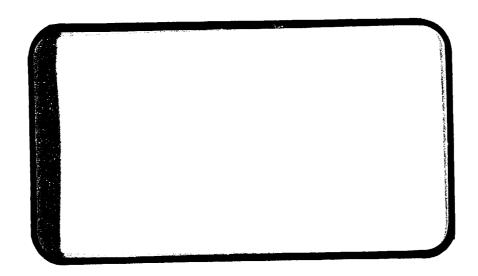
# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

(NASA-CR-134116) EFFECT OF ENGINE SHROUD CONFIGURATION ON THE STATIC AERODYNAMIC CHARACTERISTICS OF A 0.00563 SCALE 142-INCH DIAMETER SOLID ROCKET (Chrysler Corp.) 317 p HC \$19.00 CSCL 22B

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER HOUSTON, TEXAS



DMS-DR-2087 NASA CR-134,116

EFFECT OF ENGINE SHROUD CONFIGURATION ON THE

STATIC AERODYNAMIC CHARACTERISTICS OF A

0.00563 SCALE 142-INCH DIAMETER SOLID ROCKET

BOOSTER (SA10F)

Ву

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by

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for

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National Aeronautics and Space Administration
Houston, Texas

#### WIND TUNNEL TEST SPECIFICS:

Test Number:

MSFC TWT 578

NASA Series No.:

SA10F

Occupancy Hours:

128

Test Date:

September 13 - October 2, 1973

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

EFFECT OF ENGINE SHROUD CONFIGURATION ON THE STATIC AERODYNAMIC

CHARACTERISTICS OF A 0.00563 SCALE 142-INCH DIAMETER

SOLID ROCKET BOOSTER

(SA1OF)

By J. D. Johnson\* and W. F. Braddock\*\*

#### **ABSTRACT**

A test of a 0.563 percent scale Space Shuttle Solid Rocket Booster (SRB) model, MSFC Model 449, was conducted at the Marshall Space Flight Center 14 x 14 inch Trisonic Wind Tunnel. This test, TWT-578 (NASA Series No. SA10F) occupied the tunnel for 128 hours during September and October 1973. There were 273 runs (pitch polars) made. Test Mach numbers were 0.4, 0.6, 0.9, 1.2, 1.96, 3.48, 4.0, 4.45, and 4.96; test angles-of-attack ranged from -10 degrees to 190 degrees; test Reynolds numbers ranged from 3.0 million per foot to 8.6 million per foot; and test roll angles were 0, 11.25, 22.5, 45, and 90 degrees. In addition to the static stability evaluation of the primary SRB configuration, five parametric investigations were made:

- o Effect of Reynolds number.
- o Effect of engine shroud flare angle.
- o Effect of engine shroud length.
- o Effect of engine shroud strakes.
- o Effect of engine shroud strakes and trust vector control bottles.
  \* NASA/MSFC

\*\* NSI

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#### TABLE OF CONTENTS

	PAGI
ABSTRACT	iii
INDEX OF MODEL FIGURES	2
INDEX OF DATA FIGURES	4
NOMENCLATURE	5
INTRODUCTION	10
MODEL AND SUPPORT HARDWARE	11
CONFIGURATIONS INVESTIGATED	16
TEST FACILITY DESCRIPTION	18
DATA ACQUISITION AND REDUCTION	19
DATA PRESENTATION	21
REFERENCES	23
TABLES	
1. MODEL DIMFNSIONAL DATA	26
2. STING COMBINATION NOMENCLATURE	3.
3. DATA SET/RUN NUMBER COLLATION SUMMARY	3(
4. TEST SUMMARY	4:
5. TEST CONDITIONS	4:
6. PLOT SUMMARY	4.
FIGURES	
MODEL	4
DATA	. 6
APPENDIX - TABULATED SOURCE DATA	

#### INDEX OF MODEL FIGURES

Figure	Title	Page
1	Body and missile axis systems.	44
2	0.00563 scale 142 inch SRB geometry (MSFC model 449) (shroud $E_1$ ).	45
3	Various engine shrouds for a 0.00563 scale 142 inch SRB.	46
4	0.00563 scale 142-inch SRB geometry (MSFC model 449) (shroud $E_6$ ).	47
5	Strake installation on 0.00563 scale, 142-inch SRB, shroud $E_1$ .	48
6	Thrust vector control bottles, TVC.	49
7	Model components.	50
8	Typical end mount tunnel installation.	51
9	Typical side mount tunnel installation.	52
10	Sting adapters.	53
11	Stings.	54
12	Balance adapter 113 (from MSFC dwg. no. 80M42541).	55
13	Balance adapter 118 (MSFC sting no. 118 from MSFC drawing 80M42582).	56
14	Balance adapter (from MSFC dwg.no. 80M42509).	57
15	Support setup - end mount.	58
16	Support setup - side mount.	59
17	Mounting arrangements for angle of attack - 10 to 100 degrees.	60
18	Mounting arrangement for angle of attack 80 to 190	61

# INDEX OF MODEL FIGURES (Concluded)

figure	Title	Pag
19	Grit pattern.	62
20	Base pressure locations.	63

# INDEX OF DATA FIGURES

TITLE	CONDITIONS	PLOTTED COEFFICIENTS SCHEDULE	PAGES
Stability Characteristics of SRB (Basic Shroud, El, 93 Inch, 15 Degrees 3 Min.)	МАСН	(A)	1-14
Effects of Reynolds Number (With Transition Grit)	RN MACH	(A)	15-22
Effect of Reynolds Number (Without Transition Grit)	RN	(A)	23-30
Effect of Shroud Flare Angle on Aerodynamic Characteristics	CONFIG MACH	(B)	31-50
Effect of Shroud Length on Aerodynamic Characteristics	CONFIG	(B)	51-70
Effect of Strakes on Aerodynamic Characteristics	PHI CONFIG SHDSTK MACH	(A)	71-105
Effect of TVC on Aerodynamic Characteristics	PHI CONFIG SHDSTK MACH	(A)	106-133
PLOTTED COEFFICIENTS SCHEDULE			
(A) CNM, CLAM, CA, XCP/L, CTM, CYNM, CBL VS. ALPHA	ГРНА		
(B) CNM, CLAM, CA, XCP/L VS. ALZHA.			

#### NOMENCLATURE

SYMBOL	PLOT SYMBOL	DEFINITION	UNITS
$A_{b_1}$		base area of nozzle	
Ab2		exposed base area of shroud, i.e., base area of shroud less base area of nozzle	
b <sub>ref</sub>	BREF	reference span (diameter of the cylindrical section of the model)	in.
<sup>£</sup> body		length of the body	in.
<sup>l</sup> ref	LREF	reference length (diameter of the cylindrical section of the model)	in.
M		Mach number	
$P_{b_1}$		base pressures	psi
Pt		free stream total pressure	psi
P <sub>∞</sub>		free stream static pressure	psi
$\mathbf{q}_{\mathbf{\infty}}$		frae stream dynamic pressure	psi
R <sub>N</sub>		Reynolds number based on lref	
R <sub>N</sub> /ft	RN	Reynolds number per unit length	
S <sub>ref</sub>	SREF	reference area (cross sectional area of the cylindrical section of the model)	in. <sup>2</sup>
T <sub>t</sub>		tunnel total temperature	°F
X,Y,Z		body axes system coordinates (for an airplane, the X, Z-plane is the plane of symmetry, the origin of the axes system is the center of gravity or any other convenient point, and the X axis is the airplane longitudinal axis)	
x <sub>c.g.</sub>		distance of center of gravity from nose of SRB (56.69% of Lbody)	in.

#### NOMENCLATURE (CONTINUED)

SYMBOL	PLOT SYMBOL	DEFINITION	<u>UNITS</u>
$X_m, Y_m, Z_m$		missile axes (see text)	
XMRP, YMRP, ZMRP	XMRP, YMRP, ZMRP	Abbreviations for the location of the moment reference point in the missile axis system	in.
αŢ	ALPHA	angle-of-attack, angle between the $X_m$ -axis and a vector in the direction of the air flow	degrees
ф	PHI	roll angle, i.e., angle between the missile Y <sub>m</sub> -axis and the body Y-axis (from a pilot's viewpoint in an airplane, a positive roll angle is a clockwise rotation). The parameter name describes the particular protuberance angular location in the degrees (see figures 5 and 6)	degrees
$^{\mathrm{C}}\mathbf{A}$		total axial force coefficient in the body axis system	
$c_{A_{\mathbf{b}}}$		base axial force coefficient (same in both missile and body axis systems)	
$c_{A_{\overline{m}}}$	CA	total axial force coefficient in the missile axis system, $F_{A_m}/q_\infty \ S_{ref}$	
<b>c</b> c		rolling moment coefficient in the body axis system	
C <sub>k</sub> m	CBL	rolling moment coefficient in the missile axis system, $M_{X_m}/q_\infty$ $S_{ref}$ $\ell_{ref}$	
C <sub>m</sub>		pitching moment coefficient in the body axis system	
C <sub>mm</sub> .	CLMM	pitching moment coefficient in the missile axis system, $H_{Y_m}/q_\infty$ $S_{ref}$ $\ell_{ref}$	
c <sub>N</sub>		normal force coefficient in the body axis system	

## NOMENCLATURE (CONTINUED)

SYMBOL	PLOT SYMBOL	<u>DEFINITION</u>	UNITS
$c_{N_m}$	CNM	normal force coefficient in the missile axis system, $F_{N_m}/q_{_\infty} \ S_{ref}$	
c <sub>n</sub>		yawing moment coefficient in the body axis system	
C <sub>nm</sub>	CYNM	yawing moment coefficient in the missile axis system, $M_{Z_m}/q_{\infty} S_{ref} \ell_{ref}$	
$c_{\mathtt{p_{bi}}}$		base pressure coefficient; Pbi-P.	
$c_{\mathbf{Y}}$		side force coefficient in the body axis system	
$c_{Y_{\overline{m}}}$	СҮМ	side force coefficient in the missile axis system, $F_{Y_{\overline{m}}}/q_{_{\infty}}$ $S_{\text{ref}}$	
x <sub>cp</sub> /2	XCP/L	center of pressure location in fraction of body length from nose;	
		$\frac{X_{c.g.}}{x_{body}} - \frac{C_{m_m}}{C_{N_m}}  \frac{x_{ref}}{x_{body}}$	
F <sub>Ym</sub>		side force in the missile axis system, positive in the positive direction of $\boldsymbol{Y}_{\!\!\boldsymbol{m}}$	1 <b>b</b>
F <sub>Am</sub>		total axial force in the missile axis system, positive in the negative direction of $\boldsymbol{x}_{\!\!m}$	1 <b>b</b>
F <sub>Nm</sub>		normal force in the missile axis system, positive in the negative direction of $\mathbf{Z}_{m}$	1b
MX <sub>m</sub>		rolling moment in the missile axis system, i.e., moment about the $X_m$ -axis (a positive rolling moment tends to rotate the positive $Y_m$ -axis toward the positive $Z_m$ -axis	in1b

## NOMENCLATURE (Continued)

SYMBOL	PLOT SYMBOL	DEFINITION	UNITS
MY <sub>m</sub>		pitching moment in the missile axis system; i.e., moment about the $Y_m$ - axis (a positive pitching moment tends to rotate the positive $Z_m$ - axis toward the positive $X_m$ - axis)	inlb.
<sup>M</sup> Z <sub>m</sub>		yawing moment in the missile axis system; i.e., moment about the $Z_m$ -axis (a positive yawing moment tends to rotate the positive $X_m$ -axis toward the positive $Y_m$ - axis)	inlb.
SUBSCRIPT	rs		
ъ	<del></del>	base	
c.g.		center of gravity	•
i		identifies the location of the base pressure measurements	
'n		missile axis system	
ref		reference conditions	
t		total conditions	
<b>co</b>		free stream condition:	
	PARAMETER NAME	DESCRIPTION	
	FWDSTK	parameter name describing the forward str body; number in front of decimal is the n strakes. Number after decimal is the ler strake in calibers.	umber of
	Aptsik	parameter name describing the aft strake body; number in front of decimal is the s strakes. Number after decimal is the les the strake in calibers.	number of

#### NOMENCLATURE (CONCLUDED)

PARAMETER NAME	DESCRIPTION
SHDSTK	parameter name describing the shroud strakes. A number indicates the presence of eight strakes. Number 0.000 indicates no strakes.
ATHRNG	parameter name describing the attachment ring. A number indicates the presence of the ring.
ATHS	parameter name describing attachment hardware. A number indicates the presence of attachment hardware.
CONFIG	configuration code (see Table 4).

NOTE: Strakes on shroud are used to change longitudinal trim point.

#### INTRODUCTION

The wind tunnel test described herein is a continuation of a series of tests conducted to evaluate the static aerodynamic stability of a Space Shuttle Solid Rocket Booster (SRB). These tests, described in References 1, 2, 3, and 4, were designed to simulate free-fall conditions of the SRB's after separation from the shuttle launch configuration.

In addition to an evaluation of the primary SRB configuration (less electrical tunnel and forward attachment hardware), five parametric investigations were made:

- o Effect of Reynolds number.
- o Effect of engine shroud flare angle.
- o Effect of engine shroud length.
- o Effect of engine shroud strakes.
- Effect of engine shroud strakes and thrust vector control bottles.

Test Mach numbers were 0.4, 0.6, 0.9, 1.2, 1.96, 3.48, 4.0, 4.45, and 4.96; test angles-of-attack ranged from -10 degrees to 190 degrees; test Reynolds numbers ranged from 3.0 million per foot to 8.6 million per foot; and test roll angles were 0, 11.25, 22.5, 45, and 90 degrees.

#### MODEL AND SUPPORT HARDWARE

#### Model Description

The model, MSFC model 449, is a 0.563 percent scale model of a 142-inch diameter SRB. Details of this stainless steel model are presented in Table 1 and Figures 2, 3, 4, 5, and 6. Figure 2 presents the dimensions of the major geometric body segments and the attachment ring. The attachment ring was a scaled representation of a structure used to attach the SRB to the Space Shuttle External Tank. The attachment ring was affixed to the model throughout the wind tunnel test.

Figure 3 presents the dimensions of five of the six different nozzle/shroud sections used during this test. Figure 4 presents the sixth. These figures also present the dimensions and location of the throat plug. Each nozzle/shroud had a different combination of shroud angle and shroud length. They were used to investigate the effects of these differences on the static stability characteristics of the SRB. The plug was used to close the throat opening during runs where the model was not mounted on a tail sting.

Figure 5 presents the dimensions, location and roll sign convention, of eight engine shroud strakes. These strakes are scaled representations of small protuberances considered for use on the SRBs. They were used on the model only during selected parts : the test.

Figure 6 presents the dimensions, location and roll sign convention of three Thrust Vector Control (TVC) bottles. During the parts of the

test that these bottles were used on the model, the shroud strakes were also affixed and the three bottles replaced three of the eight strakes.

The model parts were given symbols to aid in identification of test configurations. These symbols are:

- N nose
- B body with attachment ring
- E<sub>1</sub> Engine nozzle with 93 inch, 15003' shroud
- E<sub>2</sub> Engine nozzle with 93 inch, 18<sup>0</sup>03' shroud
- E<sub>3</sub> Engine nozzle with 93 inch, 21003' shroud
- E<sub>4</sub> Engine nozzle with 113 inch, 15003' shroud
- E<sub>5</sub> Engine nozzle with 133 inch, 15003' shroud
- Engine nozzle with 177 inch,  $18^{\circ}17^{\circ}$  shroud (identified in TWT 572 as E2). ATHRNG AFT with E6 indicates that the attachment ring was 7.868 inches from nose.
- S Shroud strakes (eight equally spaced)
- TVC Thrust vector control bottles

Figure 7 is a photograph of the model parts, except E<sub>6</sub>, that were tested. Note that the object under the upper body was placed there to keep the body from rolling while the photograph was taken. It is not attached to the body. Some significant features of the design and construction of this model are as follows:

- o The model was made in three major sections: nose, body, and engine.
- o Nose and engine can be switched end for end in order to test at angles-of-attack above 90 degrees.

- There are two cylindrical bodies. One is a solid cylinder and is used for a sting adapter mounted from the end. The other is made in two parts with an opening in the side so that it can be fitted around a side mount.
- o Both bodies are mounted in the same position relative to the balance and maintain that position when the nose and tail are switched end for end.
- The attachment ring, which was affixed to the body throughout this test, has mounting locations on both ends of both bodies so that it can maintain its position relative to the nose and engine.
- o A slotted ring was necessary for certain side mount cases.
- o Roll angles were accomplished by mounting the engine section at different angles of rotation. (The only non-axisymmetric protuberances used during this test were affixed to this section).

  The sign convention for roll angles is shown in Figures 5 and 6.
- o Each engine section had a sting cavity through the center of its nozzle. This 0.625 inch diameter hole was closed with a plug whenever the model was not tail mounted.
- o There were two noses. One was complete and the other had a 0.625 inch diameter hole through its center. This hole was necessary for sting passage when the model was nose mounted.

Figures 8 and 9 are photographs of typical end and side mount tunnel installations.

#### Support Hardware Description

Seven pieces of the MSFC double knuckle sting were used during this test:

- o Sting adapter no. 1
- o Sting adapter no. 3
- o Sting no. 1
- o Sting no. 3
- o Balance adapter no. 113
- o Balance adapter no. 118
- o Balance adapter extension no. 80M42509

Table 2 lists all the useful combinations of these support hardware pieces and their associated angles-of-attack. Those that were used during this test are indicated.

The "sting adapters" (Figure 10) adapted the stings to the model support system of the test facility.

Using different mounting hold combinations, the "stings" (Figure 11) are adjustable in angle relative to both the sting adapters and the balance adapters.

The "balance adapters" (Figures 12 and 13) connect the balance to the sting; No. 113 is a straight adapter and No. 118 (referred to as MSFC "sting" No. 118) has a 90 degree offset. When the straight adapter was used (-10  $\leq \alpha \leq$  50 degrees and 130  $\leq \alpha \leq$  190 degrees), a one inch "balance adapter extension" (Figure 14) was used for proper tunnel position and adequate base clearance.

Typical installations of the support hardware are shown in Figures 15 and 16. Typical model and support hardware combinations are shown in Figures 17 and 18.

#### CONFIGURATIONS INVESTIGATED

The run schedule, i.e., data set collation sheet, for this test, MSFC TWT-578, is shown in Table 3. This table contains the data set collation identifiers for the test and identifies the nominal conditions at which various configurations were tested. These conditions are angle-of-attack ( $\alpha$ ), roll angle ( $\phi$ ), and Mach number. Table 4 presents a summary of Table 3. Table 4 also lists the collective data set identifiers (several angle-of-attack ranges grouped together) and the configuration numbers, which were assigned each case and are used in identification of the plots.

Configuration NBE<sub>1</sub> (Configuration #1) was a 0.563 percent scale model of a 142-inch diameter SRB configuration minus electrical tunnel and nose attachment hardware. Configurations NBE<sub>2</sub> (#2) and NBE<sub>3</sub> (#3) were designed by increasing the shroud flare angle of NBE<sub>1</sub> by 3 and 6 degrees, respectively. The shroud length was kept the same as NBE<sub>1</sub> (Figure 3).

Configurations NBE4 (#4) and NBE5 (#5) were designed by increasing the shroud length of NBE1 by 20 to 40 inches, respectively (full scale). For these two configurations, the shroud flare angle was kept the same as NBE1 (Figure 3).

Configurations  $NBE_1S$  (#6) was made by adding eight strakes equally spaced around the engine shroud of  $NBE_1$  (Figure 5).

Configuration NBE<sub>1</sub>TVCS (#7) was made from NBE<sub>1</sub>S by replacing three of the strakes with Thrust Vector Control bottles. The bottles are positioned 90 degrees apart (Figure 6).

Two additional configurations (NBE<sub>6</sub> and NBE<sub>6</sub>ATHRNG AFT) were tested to provide data for comparison with data from a previous test (Reference 4). Data from tests of these two configurations are not plotted; therefore, these configurations are not listed in Table 4.

With the exception of six runs, the complete test was made with No. 100 silicon carbide grit randomly applied over the areas shown in Figure 19.

To investigate the effect of Reynolds number on the cross flow around the cylindrical SRB body, eight runs were made with configuration NBE $_1$  at  $80 \le \alpha \le 100$  degrees (Data Set Identifiers R91R11, R91R12, R91R21, and R91R22). As can be noted in Table 3, the model was tested at all combinations of the following parameters:

- o Maximum and minimum Reynolds number obtainable in the tunnel.
- o Mach numbers of 0.4 and 0.6
- o With and without the No. 100 silicon carbide grit.

#### TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Trisonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from .2 to 5.85 is covered by using two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50 and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93, and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately  $-40^{\circ}$ F dew point and 500 psi. The compressor is a three-stage reciprocating unit driven by a 1500 hp motor.

Tunnel flow is established and controlled with a servo-actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 180°F. The air then passes through the test section which contains the nozzle blocks and test region.

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° (±10°). Sting offsets are available for obtaining various maximum angles of attack up to 90°.

#### DATA ACQUISITION AND REDUCTION

The parameters measured and recorded during this test were:

- o Wind tunnel conditions  $(P_{\infty}, P_{t}, T_{\infty})$
- o Six-component force and moment data
- o Sting attitude
- o Base pressure (-10  $\leq \alpha \leq$  50 degrees only)

Tunnel conditions were used to calculate the Mach number, the dynamic pressure, and the Reynolds number; the six-component force and moment data were used to calculate static stability coefficients; the sting attitude, nominal model attitude, and deflection calibrations were used to calculate the model angle-of-attack; and the base pressures were used to calculate base pressure coefficients.

Base pressures were recorded only over the angle-of-attack range from -10 to 50 degrees; i.e., only when the model was on a tail-mounted sting. Figure 20 shows the location of the pressure tubes. A tabulation of the base pressure coefficients (CPbi) are included in the appendix to this report. Zeroes are listed where base pressures were not recorded.

As stated above, the six-component force and moment data were used to calculate six-component static stability coefficients. These data were measured with MSFC Balance #237. The rated capacities of this balance are listed in Table 5. The six coefficients,  $C_{A_m}$ ,  $C_{L_m}$ ,  $C_{m_m}$ ,  $C_{N_m}$ ,  $C_{N_m}$ , and  $C_{Y_m}$ , are coefficients in the missile axis system.

 Parameter
 Full Scale
 Model Scale

 Moment Reference Center (from body nose)
 (from body nose)
 5.557 in.

 \*XMRP YMRP 0 0 0
 0
 0

 ZMRP 0 0
 0
 0

The force and moment data were corrected for model weight tares but tunnel flow angularity was assumed to be zero.

Reference data used to reduce the data to coefficient form are as follows:

 $s_{ref} = 0.5030 \text{ sq. in.}$ 

 $\ell_{ref} = 0.800 \text{ IN.}$ 

 $b_{ref} = 0.800 IN.$ 

<sup>\*</sup>Note: XMRP (56.69% of body length, measured from nose tip)

#### DATA PRESENTATION

Data are presented in two forms: (1) stability coefficients and center of pressure location are plotted as a function of angle-of-attack and (2) data tables are presented that include six stability coefficients, two base pressure coefficients, tunnel flow conditions, and model attitude (angle-of-attack and roll angle).

#### Data Plots

The plots of the stability coefficients are presented in the following groups:

- o Stability Characteristics of SRB (Basic Engine Shroud, E1)
- o Effects of Reynolds Number (With and Without Transition Grit)
- o Effect of Engine Shroud Flare Angle
- o Effect of Engine Shroud Length
- o Effect of Strakes
- o Effect of TVC

Configuration NBE1 was a scaled model of a 142-inch diameter SRB except for the absence of the electrical tunnel and forward attachment hardware. Data from tests of this configuration are shown on all plots as the basis for comparison. For each investigation, Table 6 presents the coefficients which are plotted and the Mach numbers for which data are available.

#### Data Tables

Data tables, identified as tabulated source data in the Appendix, are presented for each of the 273 runs that were made during this test. They are presented in the order of data set number. Each table contains a listing of the six static aerodynamic stability coefficients. Two base pressure coefficients (CPbi) are listed. Values appear for those runs that had base pressures recorded and zeroes appear for those runs that did not. Each table also includes information that describes the model configuration, the model attitude, the runnel flow conditions, and model reference dimensions.

If base axial force coefficients are desired, the equation to be used is:

$$c_{A_b} = -\frac{c_{P_{b_1}} A_{b_1}}{s_{ref}} - \frac{c_{P_{b_2}} A_{b_2}}{s_{ref}}$$

The base areas for each of the engine nozzle/shrouds are as follows:

ENGINE	A <sub>b1</sub>	Ab2
El	0.500 sq.in.	0.419 sq.in.
E <sub>2</sub>	0.500	0.524
E <sub>3</sub>	0.500	0.637
E4	0.500	0.524
E <sub>5</sub>	0.500	0.637
E <sub>6</sub>	0.793	0.879

#### REFERENCES

 NASA CR-120, 056 (DMS-DR-1253), "Aerodynamic Characteristics of a 156-Inch Solid Rocket Motor at Angles of Attack from -10° to 190°", Buchholz, R. E., Elder, D. J.; August 1972. A CONTRACTOR OF THE PROPERTY O

- NASA CR-120, 090 (DMS-DR-2012), "Aerodynamic Characteristics of a 162-Inch Diameter Solid Rocket Booster with and without Strakes", Radford, W. D., Johnson, J. D., Rampy, J. M.; March 1973.
- 3. NASA CR-128, 767 (DMS-DR-2025), "Aerodynamic Characteristics of a 142-Inch Solid Rocket Booster with and without Strakes", Radford, W. D., Johnson, J. D.; May 1973.
- 4. NASA CR-128, 774 (DMS-DR-2051), "Aerodynamic Characteristics of a 142-Inch Diameter Solid Rocket Booster (Configurations 89B and 139)", Radford, W. D., Johnson, J. D.; August 1973.

# Table 1. MODEL DIMENSIONAL DATA

MODEL COMPONENT: Nose-1	<u> </u>		
GENERAL DESCRIPTION: 142 inch S	RB nose, cone ang	le is 18° with a s	pherical
radius nose cap. (The nose was c	ut to allow for s	ting mounting wher	angle-of-
attack exceeded 130°).	<del></del>		
DDALITAC NUMBED.			
DRAWING NUMBER:	THEORET	CICAL A	CTUAL MEASURED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Length	<u> 188.0 in.</u>	1.059 in.	
Max. Width	142 in.	0.8 in.	
Max. Depth	142 in.	0.8 in.	
Fineness Ratio	1.32	1.32	
Area			
Max. Cross-Sectional	109.98 ft <sup>2</sup>	0.503 in. <sup>2</sup>	
Planform	· ·	*	<del></del>
Wetted			
Base	109.98 ft <sup>2</sup>	0.503 in. <sup>2</sup>	
Length When Drilled for Sting Mounting (see Figure 2)		0.271 in.	

Table 1. (Continued)

MODEL COMPONENT: BODY - B			
		and the first section and	·
	iameter SRB body (		on its
side for sting mounting for angle	s-of-attack from 5	0° to 130°)	· · · · · · · · · · · · · · · · · · ·
· · · · · · · · · · · · · · · · · · ·			
80M32577		·	
DRAWING NUMBER: 80M32579 80M42619			
	THEORET!	ICAL A	CTUAL MEASURED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Length	1407.8 in.	7.931 in.	-
Max. Width	142 in.	0.8 in.	
Max. Depth	142 in.	0.8 in.	•
Fineness Ratio			
Area	,		
Max. Cross-Sectional	109.98 ft <sup>2</sup>	0.503 in. <sup>2</sup>	
Planform		·	-
Wetted			***************************************
Base	109.98 ft <sup>2</sup>	0.503 in. <sup>2</sup>	

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Table 1. (Continued)

MODEL CO	OMPONENT: ENGINE SHROUD/NOZZ	LE - E		
Both are	DESCRIPTION: 142 inch diame symmetrical with the SRB bod les-of-attack -10 to 50°. The	y and were cut	to allow for sti	ing mounting
DRAWING	NUMBER: 80M42583			
		THEORE	TICAL A	CTUAL MEASURED
DIMENSIONS:		FULL-SCALE	MODEL SCALE	MODEL SCALE
Engi	ne Shroud			
	Flare Angle	15°03'	15°03'	
	Length	93 in.	0.524 in.	
	Max. Width	192 in.	1.082 in.	
	Max. Depth	192 in.	1.082 in.	·
`,	Max. Cross Sectional Area	201.1 ft <sup>2</sup>	920 in. <sup>2</sup>	
Engi	ne Nozzle			
	Length	52.2 in.	<u>0.294 in.</u>	
	Max. Width	141.6 in.	0.798 in.	
	Max. Depth	141.6 in.	0.798 in.	
	Base Area	109.52 ft <sup>2</sup>	0.500 in. <sup>2</sup>	4

Table 1. (Continued)

MODEL COMPONENT: ENGINE SHROUD/NOZZLE - E2			
GENERAL DESCRIPTION: 142 inch diameter SRB engine shroud/nozzle combination.			
Both are symmetrical with the SRB body	y and were cut	to allow for ser	nd modifically
for angles-of-attack -10 to 50°. The model was hollowed to simulate full scale.			
DRAWING NUMBER: 80M42636	<del>-</del>		•
	THEORE	TICAL A	CTUAL MEASURED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Engine Shroud			
Flare Angle	18°03'	18°03'	
Length	93 in.	0.524 in.	
Max. Width	202.7 in.	1.142 in.	
Max. Depth	202.7 in.	1.142 in.	***
Max. Cross Sectional Area	224.1 ft <sup>2</sup>	1.024 in. <sup>2</sup>	
Engine Nozzle		•	
Length	52.2 in.	0.294 in.	
Max. Width	141.6 in.	0.798 in.	
Max. Depth	141.6 in.	0.79% in.	
Base Area	109.52 ft <sup>2</sup>	0.500 in.2	

Table 1. (Continued)

MODEL COMPONENT: ENGINE SHROUD/NOZZ	LE - E <sub>3</sub>		
GENERAL DESCRIPTION: 142 inch diame  Both are symmetrical with the SRB bod  for angles-of-attack -10 to 50°. The	ly and were cut t	o allow for sti	ng mounting
DRAWING NUMBER: 80M42636	·		CTUAL MEASURED
	THEORET: Full-scal <u>e</u>	MODEL SCALE	MODEL SCALE
DIMENSIONS:	TOLL-SOMEL		
Engine Shroud			
Flare Angle	21°03'	21°03'	
Length	93 in.	0.524 in.	<u> </u>
Max. Width	213.5 in.	1,203 in.	
Max. Depth	213.5 in.	1,203 in.	
Max. Cross Sectional Area	248.7 ft <sup>2</sup>	1.137 in. <sup>2</sup>	
Engine Nozzle			
Length	<u>52.2 in.</u>	0.294 in.	
Max. Width	141.6 in.	0.798 in.	
Max. Depth	141.6 in.	0.798 in.	
Base Area	109.52 ft <sup>2</sup>	0.500 in.	

Base Area

Table 1. (Continued)

MODEL COMPONENT: ENGINE SHROUD/NOZZLE - E
GENERAL DESCRIPTION: 142 inch diameter SRB engine shroud/nozzle combination.
Both are symmetrical with the SRB body and were cut to allow for sting mounting

for angles-of-attack -10 to 50°. The model was hollowed to simulate full scale.

DRAWING NUMBER: 80M42636

·	THEORETICAL		ACTUAL MEASURE
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Engine Shroud			
Flare Angle	15°03'	15°03'	
Length	113 in.	0.636 in.	
Max. Width	202.7 in.	1.142 in.	
Max. Depth	202.7 in.	1.142 in.	
Max. Cross Sectional Area	224.1 ft <sup>2</sup>	1.024 in.	
Engine Nozzle			
Length	32.2 in.	0.182 in.	
Max. Width	141.6 in.	0.798 in.	
Max. Depth	141.6 in.	C.798 in.	
Base Area	109.52 ft <sup>2</sup>	0.500 in.	2

Table 1. (Continued)

MODEL COMPONENT: ENGINE SHROUD/NOZZLE - E				
GENERAL DESCRIPTION: 142 inch diameter SRB engine shroud/nozzle combination.  Both are symmetrical with the SRB body and were cut to allow for sting mounting for angles-of-attack -10 to 50°. The model was hollowed to simulate full scale.				
DRAWING NUMBER: 80M42636				
	THEORE	TICAL A	CTUAL MEASURED	
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE	
Engine Shroud				
Flare Angle	15°03'	15°03'	<del></del>	
Length	133 in.	0.749 in.		
Max. Width	213.5 in.	1.203 in.		
Max. Depth	213.5 in.	1.203 in.		
Max. Cross Sectional Area	248.7 ft <sup>2</sup>	1.137 in. <sup>2</sup>		
Engine Nozzle				
Length	12.2 in.	0.069 in		
Max. Width	_141.6 in.	<u>0.798 in</u>		
Max. Depth	<u>141.6 in.</u>	0.798 in.		
Base Area	109.52 ft <sup>2</sup>	0.500 in. <sup>2</sup>		

# Table 1. (Continued)

MODEL COMPONENT: Engine/Shroud - E6				
GENERAL DESCRIPTION: 142 inch diameter SRB engine shroud/nozzle combination				
for configuration 89B. Both are symmetrica	1 with SRB body and	were cut to		
allow for sting mounting for angle of attack -10° to 50°. This model was				
hollowed to simulate full scale.				
DRAWING NUMBER: MSFC 80M51303				
DIMENSIONS:	FULL SCALE	MODEL SCALE		
Engine Shroud				
Flace Angle	18°17'	18°17'		
Length	<u>177 in.</u>	0.997 in.		
Max Width	259 in.	1.459 in.		
Max Depth	259 in.	1.459 in.		
Max Cross-Sectional Area	365.68 ft <sup>2</sup>	1.672 in. <sup>2</sup>		
Engine Nozzle				
Length	26 in.	0.146 in.		
Max Width	178.5 in.	1.005 in.		
Max Depth	178.5 in.	1.005 in.		
Base Area	173.89 ft <sup>2</sup>	0.793 in. <sup>2</sup>		

Table 1. (Continued)

MODEL COMPONENT:	Attachment Ring - R		
GENERAL DESCRIPTION: Ar	n attachment ring (used to	attach SRB to ET)	is located
1.127 inches model scale	e (200 inches full scale)	forward of the shro	oud flare.
		<del>,</del>	<del></del>
-		PAC 8	<del></del>
DRAWING NUMBER:			
	THEORE	TICAL A	CTUAL MEASUPED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Length			
Max. Width	_10.3 in.	0.058 in.	
Max. Depth	10.6 in.	0.059 in.	
Fineness Ratio			
Area			
Max. Cross-S	ectional		
Planform	******		
Wetted	The state of the s	·	
Base			

Table 1. (Continued)

MODEL COMPONENT:S	trakes - S		
GENERAL DESCRIPTION: The strakes	extend lengthwi	se with the leadi	ng end at
the forward edge of the shroud fla	are and the trail	ing end at the tr	ailing edge of
the shroud. There are eight strak	ces equally space	s around the shro	oud and designe:
to fit only E <sub>1</sub> .			
DRAWING NUMBER: 80M21800	THEORE	<u>TICAL</u>	ACTUAL MEASURED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Length	96.4 in.	<u>0.543 in.</u>	
Max. Width	14.2 in.	0.08 in.	
Max. Depth	14.2 in.	0.08 in.	<del>4</del>
Fineness Ratio			
Area			
Max. Cross-Sectional	<del></del>		<del></del>
Planform			
Wetted	· <del>Think the second of the second of</del>		
Base			

Table 1. (Concluded)

MODEL COMPONENT: Thrus	t Vector Control	Bottles - TVC	
GENERAL DESCRIPTION: THE TANKS			
THE FORWARD EDGE OF THE SHROUD F	LARE AND THE TRAI	LING EDGE OF THE	SHROUD
DRAWING NUMBER:	THEORE	TICAL	ACTUAL MEASURED
DIMENSIONS:	FULL-SCALE	MODEL SCALE	MODEL SCALE
Length	60 IN.	0.338 IN.	
Max. Width	20 IN.	0.113 IN.	<del></del>
Max. Depth	20 IN.	0.113 IN.	And the state of t
Fineness Ratio	And the second s		
Area			
Max. Cross-Sectional		and the second s	•
Planform			
Wetted			
Base			

Table 2. STING COMBINATION NOMENCLATURE

		STING ADAPTER	DAPTER			BALANCE	BALANCE ADAPTER	BAI ANCE	
SCHEDULE	a RANGE (deg)	ADAPTER NO.	HOLE NO.	ADAPTER POSITION	STING NO.	ADAPTER NO.	HOLE NO.	ADAPTER EXTENSION	NOSE
(E)¥	-10 to 10 170 to 190	<b>-</b>	53	7.50 in.		113	-+	80M42509	FWD AFT
(L) (L)	10 to 30 150 to 170		15				m +		FWD AFT
	30 to 50 130 to 150		54	-	>-		4+		FWD
(1) <sup>0</sup>	50 to 70	m -	63	3.50 in.	m <b>-</b>	118(2)	A-3(B-6) <sup>(3)</sup>		es Es
w	70 to 90		Ę-	•		***************************************	B-5(A-2)		<u>s</u>
F(1)	80 to 100						A-1(B-4)		UP or DOWN
G	90 to 110						B-5(A-2)		NMOO
(C)#	110 to 130	<b>→</b>	63		->-	-	B-6(A-3)		DOWN

Combinations used  $\Xi$ 

MSPC Sting No. 118

(Alternate hole) (3)

Table 3.

NBE, A 0 0 10 10 10 10 10 10 10 10 10 10 10 10	DATA SET	CONFIGURATION		SCMD.	1	RAMET	TERS	ERS/VALUES	_	ر ا ا ا ا	MAC	MACH NUMBERS	BERS	( OR	ALTE	RNATE	IND	PEND	ENT	ALTERNATE INDEPENDENT VARIABL	LE )		Π
NBE,	10ENTIFIER			_	-	3	7					9.0	0.0	7			3.48	4.0	3.44		96		Γ
	R911A1	NBE,	<b>Y</b>			ş	9		_	·	. 8	Ż	•			3	32.	1513	3/2		2		
C	181		8							No.		1/2	1/4	3		10	1/2	267	892		2/6		-
D   D   D   D   D   D   D   D   D   D	121		2								0	13/						27%	1/1/2	1	20		
F	101		0					2	_		1,0	70	218	6/2	10	10	1/2	J.	48		CV.		
	151		7					3		1.0	N	22%	120/0	254	10	\	30						
T   MFT 3   S   S   S   S   S   S   S   S   S	1111		H					a	ļ.,		7	10	145	153	70	10	60						
The control of the	121		I					3	-			À					**	264	265		70		
	151		5						00				10	2	2/	70	19	25%	259		%		
NBE, B 0 0 - 04 4P 1  NBE, B 0 0 - 04 70 5 57, 57, 69, 65, 65, 65, 65, 65, 65, 65, 65, 65, 65	IKI		×	_					Las					. A.				26.3%	262		1 -/		
NBE, B 0 0 1 0 1 1 24, 51, 50, 54, 54, 54, 55, 55	201		0				0		9					253	/0	*							MBE
NBE, B 0 0 100 100 5 57/2 51/2 59/2 54/2 51/2 59/2 54/2 132/	152	->-	F		1		8	1	1		50			622									BILI AGE
NBE, B 0 0 1 10 5 57, 51, 59, 54, 54, 54, 54, 54, 54, 54, 54, 54, 54				$\bot$		_]		_	$\dashv$	4													-
1	891281	NBE,	8	-	0	L					5	/0	21/2	59%	_	70	12						
	707	H	0					3			N	15/	9/12	253	6 13	7	96	, , ,					
769 9/1 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1	251		7					2			7	70	1/22	522	2/9	8 %	%		400	•	75		-
7 1 4 AFT 5 9/2 1/6 69%	2411		H					ふ		. 4	ゼ	3	123		15/6	10	1/2				g v		
1   1   4   4   0   1   4   4   4   1   1   1   1   1   1	122		7					AF			ه ي	2	0/0		9	70	20	- 4					
	202	*	a	Y	7		व							1/					· .			П	7
7 13 19 25 31 37 43 49 55 61 67		13	2		ĸ		31		33		<b>63</b>		₩.	_	S	S		5.1		67		75	76
COMPANION CAMP CALL IN CAMPANION CAM	5" M	-W. GA	674	3	CY	4	151	1,4,	1	1			7 7 7		1		3	:					Q

\* Run 254/6 WAS NOSE DOWN

Table 3. (Continued)

	VARIABLE )	964 544					**************************************	T	EST	RUN	NU	MBE	RS						67 75 76		I) IDVAR (2) NDV	
DATE:	TE INDEPENDE	3.48 4.00	0/,0	% %	926	1301	, 73/6						83/0	%6	93%	%01	2/42		19			
SUMMARY	BERS ( OR ALTERN	961 27 60	2		1552 153	9	1/89 9/21 9/81						185 /mm 1/5m	1/2 /200 /sor	1/21 /Enz /242	126 176 1446	18/		49 55			
ER COLLATION		RUNS 0.4 0.6	0	l'on	322 5	19121	1410	:					15%	2002	244/0	124/	%1		43			
DATA SET/RUN NUMBER COLLATION SUMMARY	RS/VALUES	35.0	4		400	S NO	AFT S	1 4 4 4					ON FWD 5	up   5	ap 5	S Ma	2 MM + 14		31 37		COEFFICENTS	
	SCHD, PARAN	3/2	<u>3</u>	<u>a</u>	F	#	٦	F   V   V					8004	0			17 14 14		25			
TEST: MSFC TWT 578 (SAIOF)	CONFIGURATION	MAE	NOE3					->-					NBE				À		13 19			
TEST: MSF	DATA SET	100	100 L		3/1	1HE 16	351	4 3F2				,	R91 4B1	100	F 4F1	168	451		1	212212	000	

\* Run 255/0 WAS NOSE DOWN.

Table 3. (Continued)

### ON FINE 5   196   197   196   349   400   445   496   19		
UP   5   196   349   400   445   496   100   445   496   100   445   496   100   445   496   100   445   496   100   445   496   100   445   496   100   445   496   100   445   496   100   1		_
ON FWO 5	GRIT NOSE	
UP   S   19%   17%   13%   9%   9%   17%   13%   17%   14%   19%   17%   19%	FWD	00
UP* 5	up   5	
DN   5   1736   1776   1456   1966		
AFT   S   21/6   29/6   15/6     UP   1		
1   10   1   15/2   1	AFT S	
ON AFT 1	1 4 46 1	<b>1</b>
0N AFT 1		
A AFT 1		00
ON FWO S 49/2 39/2 49/2 81/2  UPS 5 223/2 259/2 259/2 125/2 91/2  DN 5 169/2 169/2 170/2 147/2 105/2  TUP 1 23/2 24/2 25/2 65/2 76/2  13 37 43 49 55 61 67  COEFFICENTS	V AFT 1	0 0
0N FWO 5 496 396 666 816  UP 5 2296 2596 1256 916  DN 5 1696 1697 1706 1477 1056  AFT 5 2376 2576 657 766  1 UP 1 37 43 49 55 61 67  COEFFICENTS		
UIP 5   229/2   259/2   134/2   93/	ON FWO	0 0 km
Mp# 5   22%   25%   12%   17%   10%   17%   10%   17%   10%   17%   10%   17%   10%   17%   10%   17%   10%   17		
DN   S   169/2   170/2   147/2   105	5 4007	
AFT 5   25/2 24/2   25/2   65/2   76/2		
37 43 49 55 61 67 COEFFICENTS (DVAR (2)	5 438	
37 43 49 55 61 67  Littlet Little Lit	1 94 1	<b>4   4  </b> /
37 43 49 55 61 67		
37 43 49 55 61 67		
IDVAR(I) IDVAR(2)		25
IDVAR (1) IDVAR (2)	11,,,,,,,,	1111
	COEFFICEN	
		1

\* Runs 256/0 AND 257/0 WERE NOSE DOWN.

Table 3. (Continued)

	7							TE	STF	RUN	NUM	BER	S	_	, , , , , , , , , , , , , , , , , , ,	1	_	_	1	T	75 76	À	1	ļ
																						1 2 2		
	BLE	1.96																			6	IDVAR (2)		
	VARIABLE	45												Г								}		
	DENT	0 4										••		-						$\dashv$	١	110000		
	MACH NUMBERS ( OR ALTERNATE INDEPENDENT	348 400 445 496			. 0					. 0	. 0			_	-					4	5	4		
PATE	TE IND	348	3	20	9/001	1/401	17/2		20	9/201	9/101	12.50	18/									1		
	ERNA	967	9/19	135/	156	1841	9/109	ı	1/2		1/21	14/	63/2								55	1		
٧٢	ALTI		37/6	10/102			26/6		32%		23%	1-										1		
MMAF	S (0	1/2	3		1234	10				20	70	70		1	╁					ㅓ	\$	7		
N SU	MBER	6.0	36%	202	23	_	7/2	·	33%	1502	738/			Т	┿-			10		4		7	1	l
ATIO	N H	9.0	35/6	1602	1/62	1/21	%2		34%	1/402	1382	1291	162			24%	9/52	1/42	36,52		5	3		
כסרר	ğ															245/6	<b>%52</b>	24%	1602			4	1	1
BER	NO.	SUNS	5	5	4	5	8		5	5	4	6	V	1	1	2	2	2	2		33	1	COEFFICENTS	
NON	18	Š	03		+	3	AFT		Feed	dn	077	130	PER		1	40						1	EFFIC	
RUN	NAV.	A PARTY	ON FWD				-	<b>†</b>	3	+	Ė	Ë	Į,	+	1	3	OFF	30	230		31	Ė	ប	
DATA SET/RUN NUMBER COLLATION SUMMARY	OADAMETERS/VALUE	A RW/ GAIT MOSE RUNS O.4		Г	F	1	-	<del> </del>		F	F	+-	‡,	+		ř	-	NIL				}		
ATA	MAGA	9	//.zs/	_	1	L	-		22.5		1	T	‡	+	1	0			•		25	4		
	9,70		9	$\mathbf{T}$			-		9	7	F		-			0			>			3		
h	F	ő	8	10	14	3	1	4	8	10	14	17	*	4	╀	#	-		=			1		
(30)		z																			19	4	•	
TWT578(SAIDF)		CONFIGURATION																	ļ					
757		IFIGU	10						MREC		$\perp$		1			E					13	4		1
		Ö	MRE						7							NBE							6	<b>1</b>
: MSFS	<b> </b>	F 13	+	+	+	+	+	+	-	\  -  -	+	+	1	+	$\dashv$	+	7	12	273	$\vdash$	^	1		G OR B
Ĭ.		DATA SET	001 881	3 6	200	BELL	T A	3	001 ( 81		ן נ	5	3	3		R91 RII	812	821	2			=	,	8 3
TEST	Ц	9 5	8		土	1	士	1	0		丁	ナック	Ţ			٩				1_	Ŀ			

Table 3. (Concluded)

•							7	rEST	RUN	NUM	18EF	₹S						_	75 76	_	۵ <u>۲</u>
	RIÁBLE )	96%					X 2 X 2 X 2 X 2 X 2 X 2 X 2 X 2 X 2 X 2					3°		:					67	44444	1DVAR (2)
	( OR ALTERNATE INDEPENDENT VARIABLE	1.96 3.48 4.00 4.45													-					1	IDVAR (1)
	DEPEND	8 4.00			*									. /:					61	1111	701
DATE	ATE IN	3.4	%:: '	%" "			11511	_				9/6/1	114%	113/0						1 1	
	LTERN	-	Ī	129	1441		1942	12/2	143%										55	1 1	
MARY	OR A	1.2	%31	2881	111/0		728		189%			163/	1/481	18/						111	
WOS N	ABERS	6.0																	49	111	
DATA SET/RUN NUMBER COLLATION SUMMARY	MACH NUMBERS	9.6	106	1/281	354		1161	35	12/0		•	9/161	183/6	1846					43	1	
COLL	ΑĀ	Ru/ 6211 MOSE RUNS 0.4 0.6												\ \						1	1
MBER	NO.	RUNS	4	#	4		77	+-	*			4	4	4					37	1	CENTS
ON NO	PARAMETERS/VALUES	T Mos	1 40	an	DM		077	+	70			ap	up	Na						1	COEFFICENTS
ET/R	TERS/	16 6a	NO M		À	+	5		*			NO m		<b>,</b>					31	1	
ATA S	ARAME	BR	20		<b>,</b>		7		-			90 Am		<b>,</b>   ,						1	
۵	SCHD. P	8	0		4		9	_	•			60		1			i		22	4	
7	Š	Ö	a	F	H		-   6	L	*			0	F	H						1	
TEST: MSFC TWT578 (SAIDF)		201	NBE, TVCS				NRE TWE					71/C S							19	4	
1121		2014	E, 7				T u	#	*				П	7					13	4	
57	{	3	NB				UR					NBE,								4	<b>a</b>
: MS	DATA SET	IDENTIFIER	100	DFI	IHA		103	EFI	EHI				FFI	FHI					,	2162	8 80 8
TES	ă	IDEN	R91 001				Pai Eni	-	-			R91 FDI	H							7	•

DATA SET IDENTIFIER R91100	CONFIGURATION NUMBER 1	CONFIGURATION SYMBOLS  NBE  NBE	PROTUBERANCE ROLL ANGLE (¢) (DEGREES)	ANGLE-OF-ATTACK	MACH NUMBER RANGE 0.4 to 4.96 0.5 to 3.48
R91300 R91400	m 4	NBE4	, ,		
R91500 R91A00	и <b>Ф</b>	NBE <sub>5</sub>	. 0		
R91C00			11.25		
R91D00 R91E00	<b>~</b>	NBE <sub>1</sub> TVCS	0 45	50 to 130	
R91F00	>	->-	06	-> -	;

\*The full angle of attack range was not covered at all Mach numbers. See Table 3 for details.

Table 5.

NUMBER   NU (inil)  0.40	YNOLDS MBER lion per ft)	TEST CON DYNAMIC PRESSURE (pounds/sq.inch)	STAGNATION TEMPERATURE	STAGNATION
NUMBER   NU (inil 1	MBER lion per ft)	PRESSURE		STAGNATION
NUMBER   NU (inil   1	MBER lion per ft)	PRESSURE		STAGNATION
0.40 3. 0.60 4. 0.90 6. 1.20 6. 1.96 6. 3.48 6. 4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.	lion per ft)		I IEMPERAIURE	PRESSURE
0.60 4. 0.90 6. 1.20 6. 1.96 6. 3.48 6. 4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5.	63		(degrees Fahrenheit )	(pounds/sq.inch)
0.90 6. 1.20 6. 1.96 6. 3.48 6. 4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.		2.21	100	22
1.20 6. 1.96 6. 3.48 6. 4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.	95	4.35	100	22
1.96 6. 3.48 6. 4.00 6. 4.45 5. 4.96 4.  0.40* 3. 0.40* 5. 0.60* 4.	25	7.37	100	22
3.48 6. 4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.	62	9.14	100	22
4.00 6. 4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.	92	10.02	100	28
4.45 5. 4.96 4. 0.40* 3. 0.40* 5. 0.60* 4.	96	6.36	100	60
4.96     4.       0.40*     3.       0.40*     5.       0.60*     4.	30	5.53	100	75
0.40* 3. 0.40* 5. 0.60* 4.	20	3.83	100	75
0.40* 5. 0.60* 4.	20	2.56	100	75
0.40* 5. 0.60* 4.	.00	1.85	100	18
0.60* 4.	40 .	3.33	100	32
	10	3.55	100	18
	.60	7.42	100	38
BALANCE UT		MSFC_237		COEFFICIENT
	• '	CAPACITY:	ACCURACY:	TOLERANCE:
NORMAL	FORCE _2	00 lbs	<del></del> .	
SIDE F	ORCE	00 lbs		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
AXIAL	FORCE	20 lbs	<del></del>	
PITCHI	NG MOMENT _1	96 in-lbs _		
ROLLIN	IG MOMENT	98 in-1hs -		·
YAWING	MOMENT	50 in-1hs		<del></del>
COMMENTS:				
	*Used in Re	ynolds number ef	fect study.	
		•	<b>→</b> •	

Table 6. PLOT SUMMARY

	•			Æ	MACH NUP	NUMBERS		*	en after Min		,	COE	COEFFICIENTS	ITS	- /-	
INVESTIGATION	0.4	0.4 0.6 0.9	0.9	1.2	1.96	3.48	4.00	4.45	4.96	CN	CLMM	S	XCP/L	СУМ	CYNM	CBL
Config. NBE	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
R <sub>N</sub> effect	<b>×</b>	×							<b>**</b> -**	×	×	×	×	×	×	×
Shroud flare angle effect		×	×	×	×	×				×	×	×	×			
Shroud length effect	apikkan a <b>liji</b> n ad iktor t	×	×	×	×	×				×	×	×	×			
Strake effect	******	×	×	×	×	×				×	×	×	<b>×</b>	×	<b>×</b>	×
TVC effect		×		×	×	×	•			×	×	×	×	×	×	×

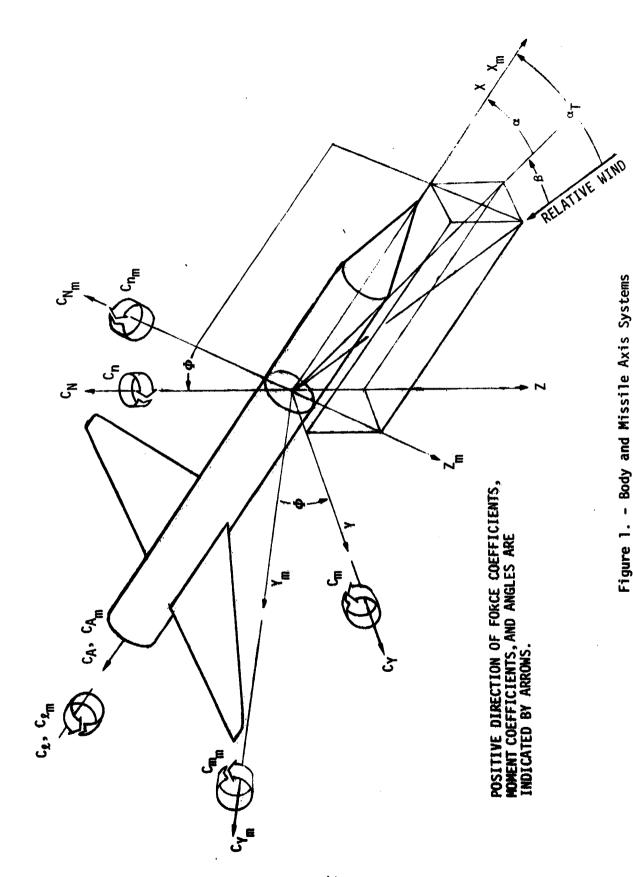


Figure 1. - Body and Missile Axis Systems

Figure 2. 0.00563 SCALE 142-INCH SRB GEOMETRY (MSFC MODEL 449) (SHROUD E<sub>1</sub>)

	·A	В	8
E	.524 in.	1.082 in.	15° 03'
E <sub>2</sub>	.524	1.142	18° 03'
E <sub>3</sub>	.524	1.203	21° 03'
E <sub>4</sub>	. 536	1.142	150 031
E <sub>5</sub>	.749	1.203	15° 03'

NOTE: SHROUD  $\mathbf{E_1}$  WAS USED IN TWT-572, BUT WAS REFERRED TO IN THAT TEST AS  $\mathbf{E_3}$ .

Figure 3. VARIOUS ENGINE SHROUDS FOR A 0.00563 SCALE 142-INCH SRB

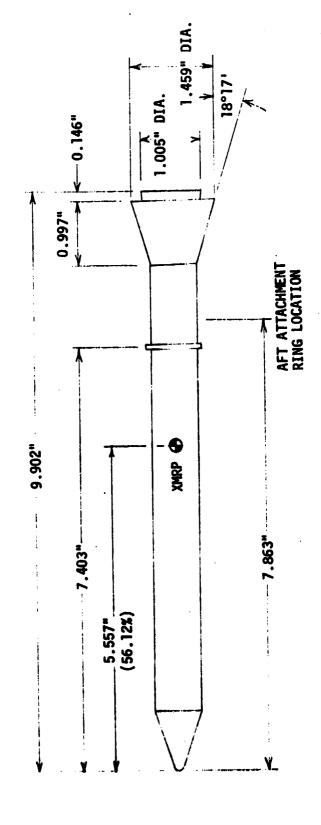
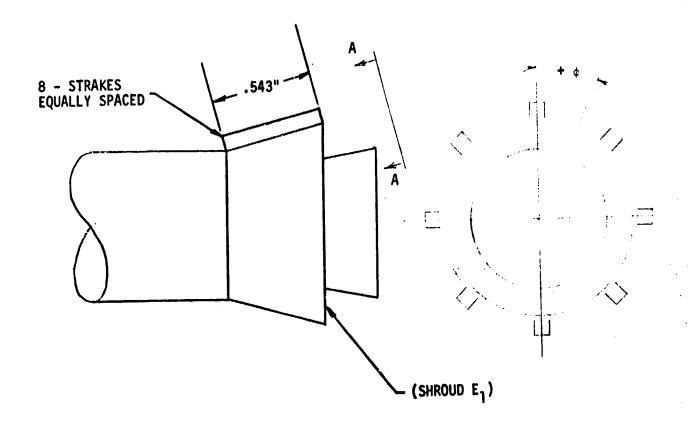


Figure 4. 0.00563 SCALE 142-INCH SRB GEOMETRY (MSFC MODEL 449) (SHROUD  $\mathbf{E}_6$ )



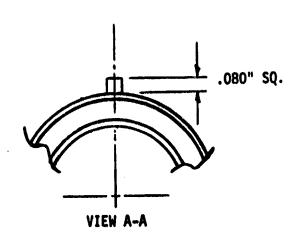


Figure 5. STRAKE INSTALLATION ON 0.00563 SCALE, 142-INCH SRB, SHROUD E

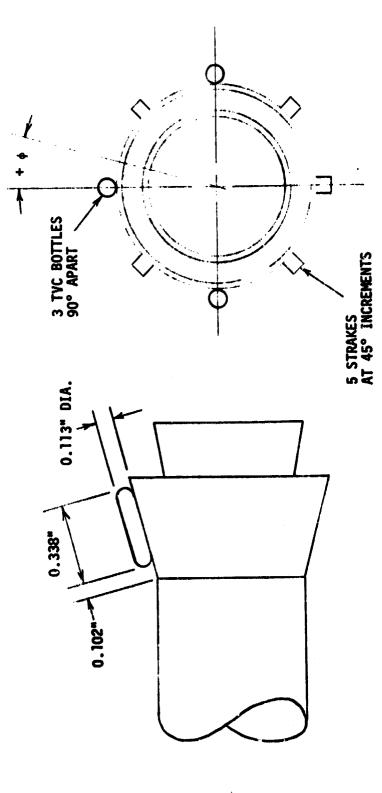
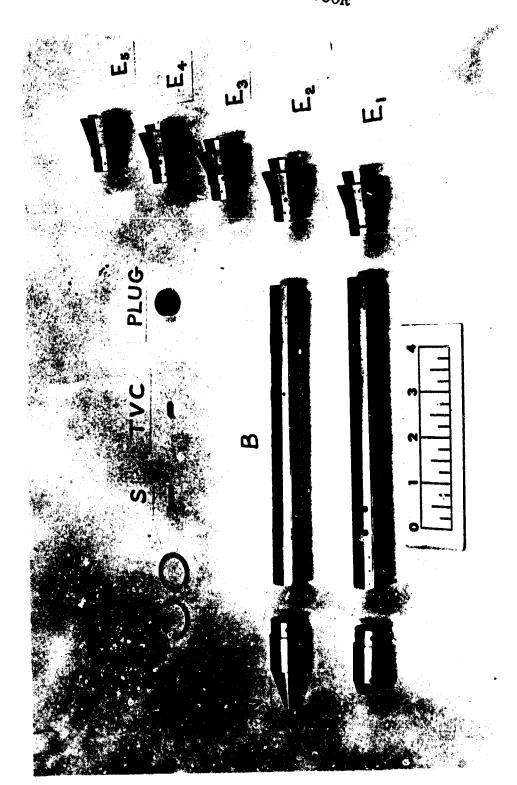


Figure 6. THRUST VECTOR CONTROL BOTTLES, TVC

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IGURE 7. MODEL COMPONENTS

## REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

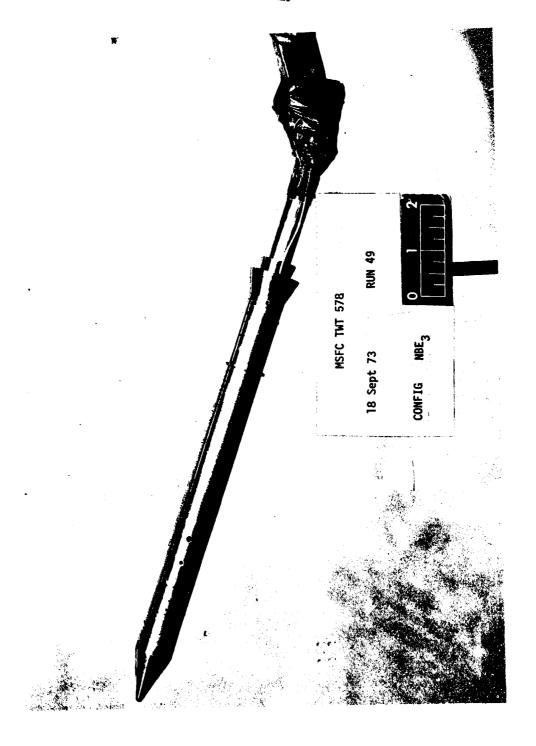


FIGURE 8. TYPICAL END MOUNT TUNNEL INSTALLATION

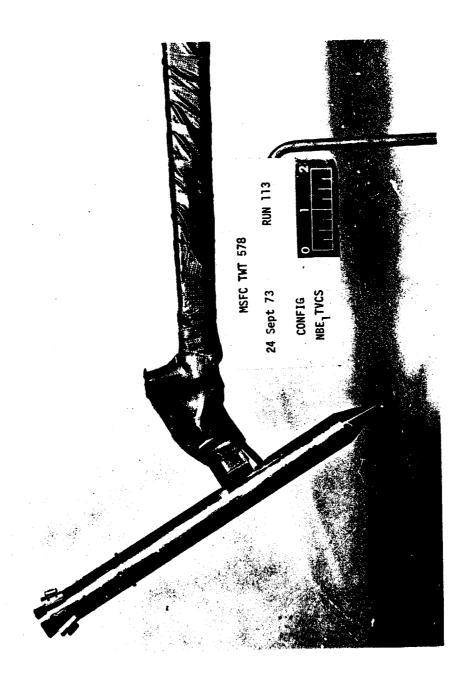
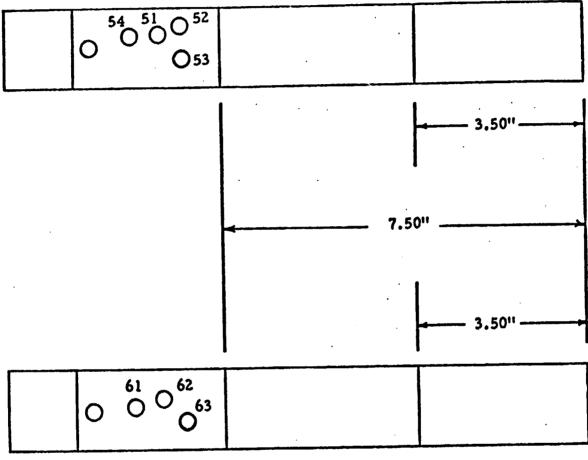


FIGURE 9. TYPICAL SIDE MOUNT TUNNEL INSTALLATION

Sting Adapter 1



Sting Adapter 3

Figure 10. STING ADAPTERS

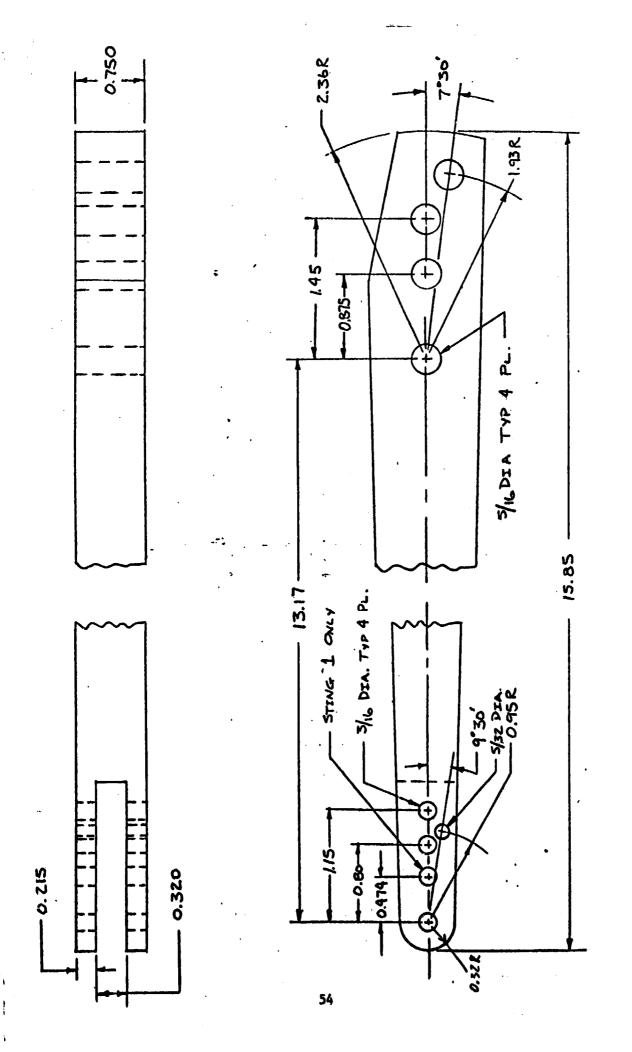


Figure 11. STINGS

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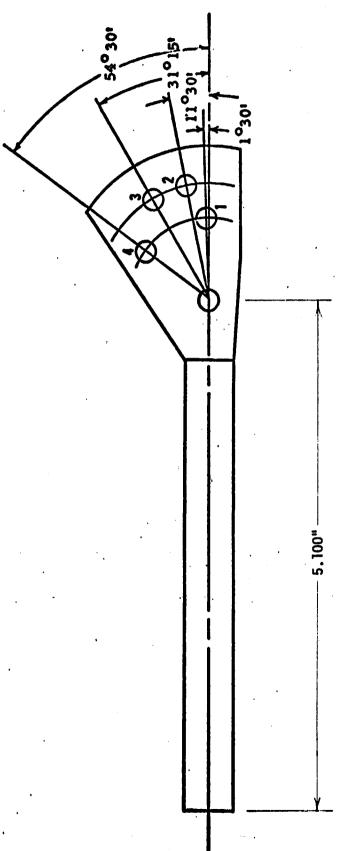
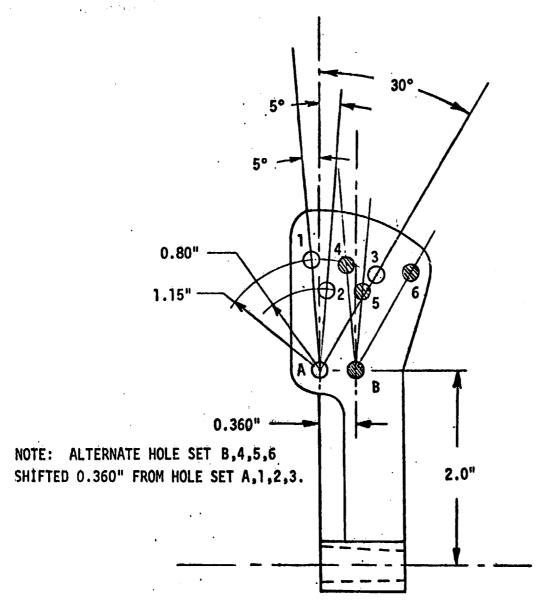


Figure 12. BALANCE ADAPTER 113 (FROM MSFC DWG. NO. 80442541)



Holes A-2 and B-5 Radius = 0.80"
Holes A-1,3 and B-4,6 Radius = 1.15"

Figure 13. BALANCE ADAPTER 118 (MSFC STING NO. 118 FROM MSFC DRAWING 80M42582)

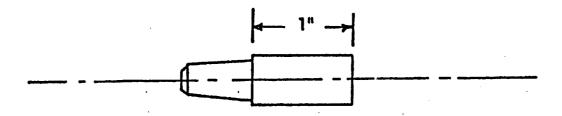


Figure 14. BALANCE ADAPTER (FROM MSFC DWG. NO. 80M 42509)

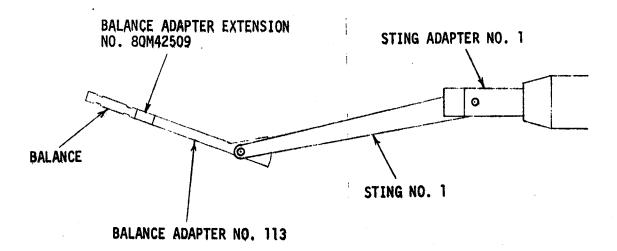


Figure 15. SUPPORT SETUP - END MOUNT

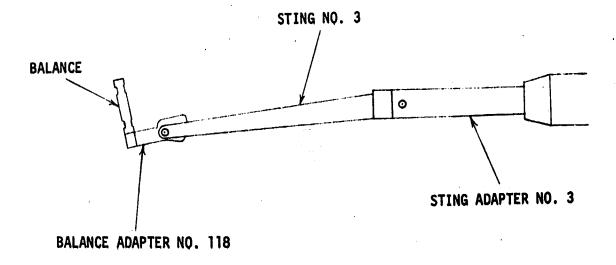


Figure 16. SUPPORT SETUP - SIDE MOUNT

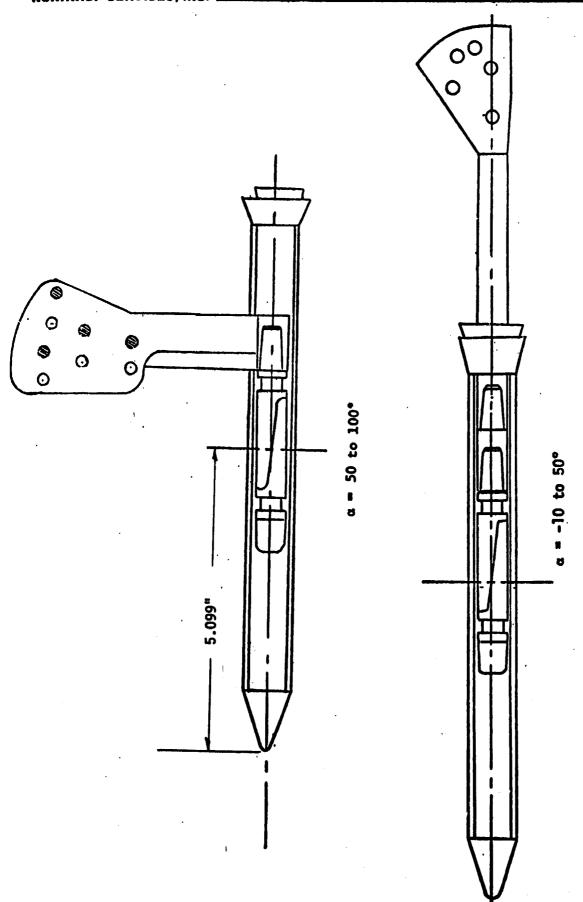


Figure 17. MOUNTING ARRANGEMENTS FOR ANGLE OF ATTACK -10 TO 100 DEGREES

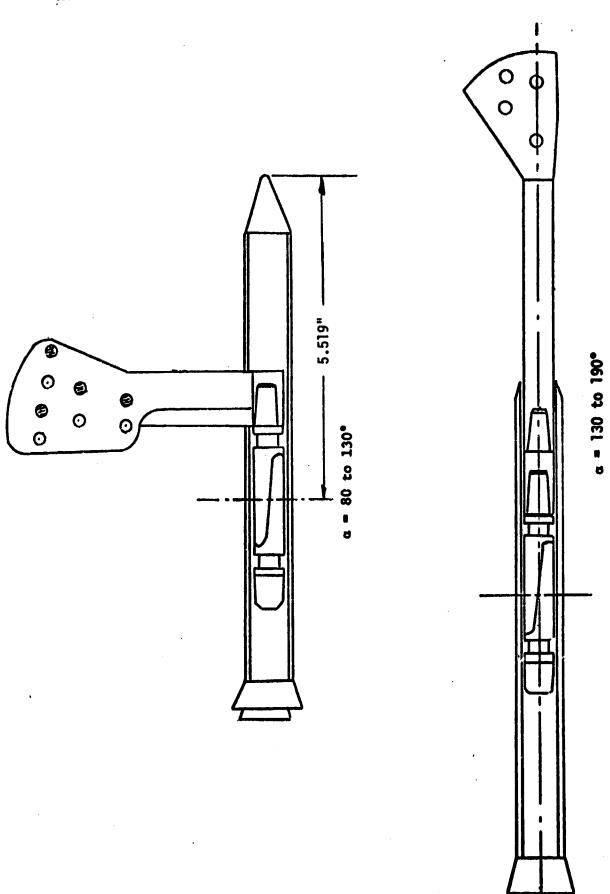


Figure 18. MOUNTING ARRANGEMENTS FOR ANGLE OF ATTACK 80 TO 190 DEGREES

MORTHROP SERVICES, INC. \_\_\_\_

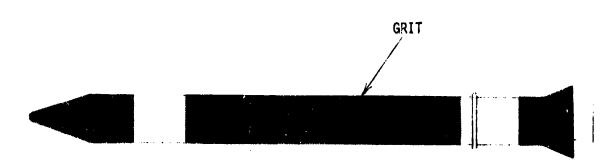


Figure 19. GRIT PATTERN

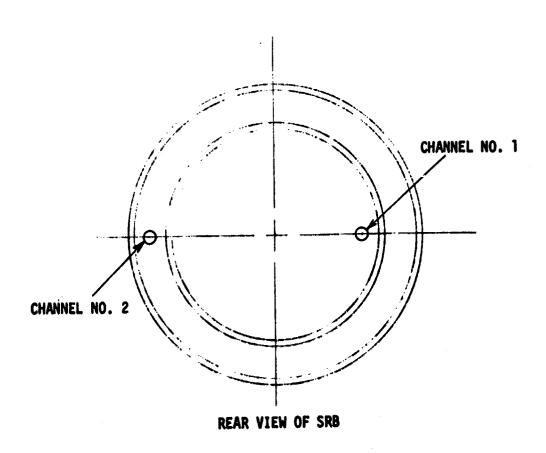
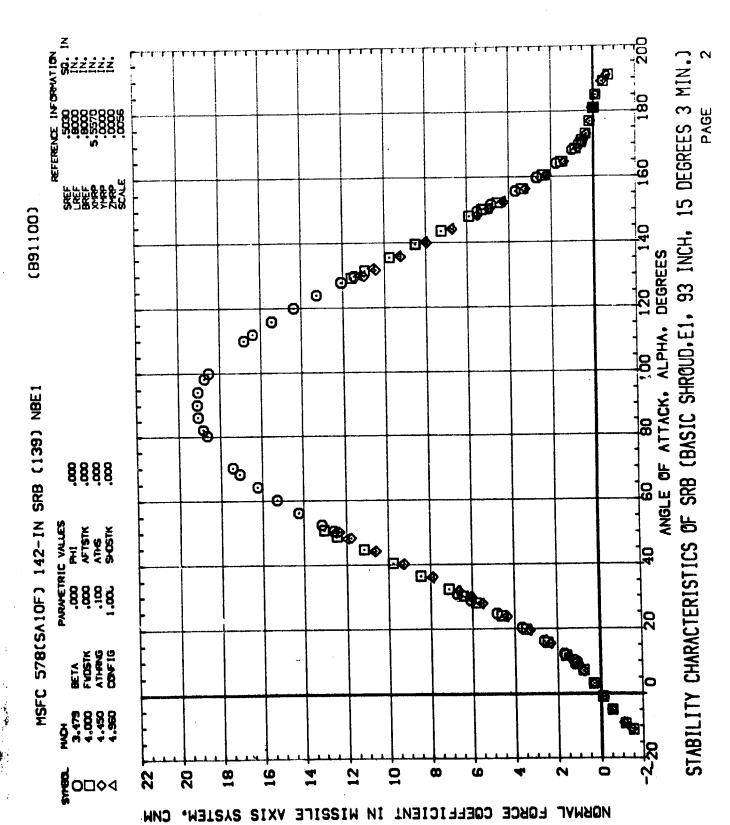


Figure 20. BASE PRESSURE LOCATIONS

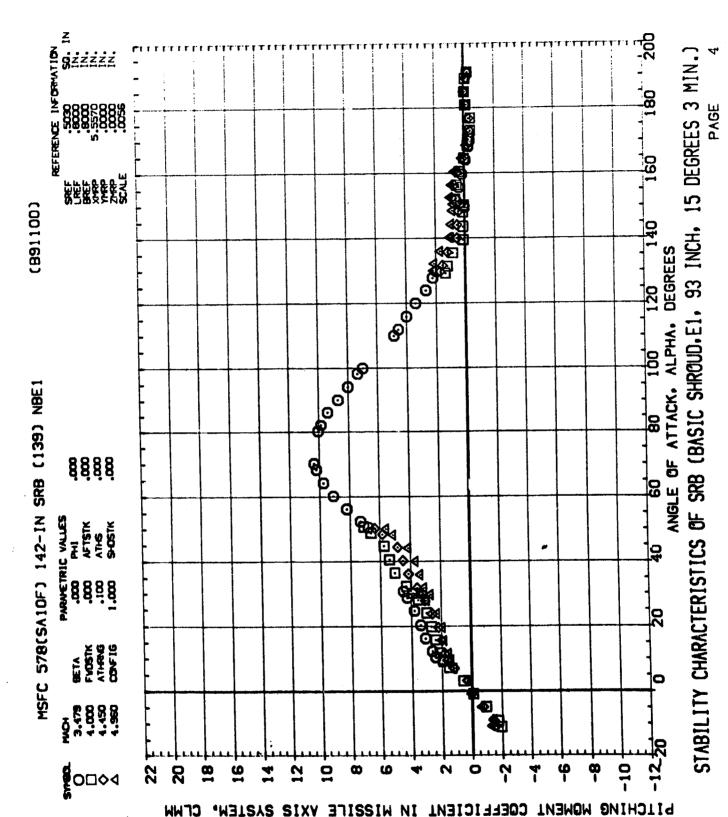
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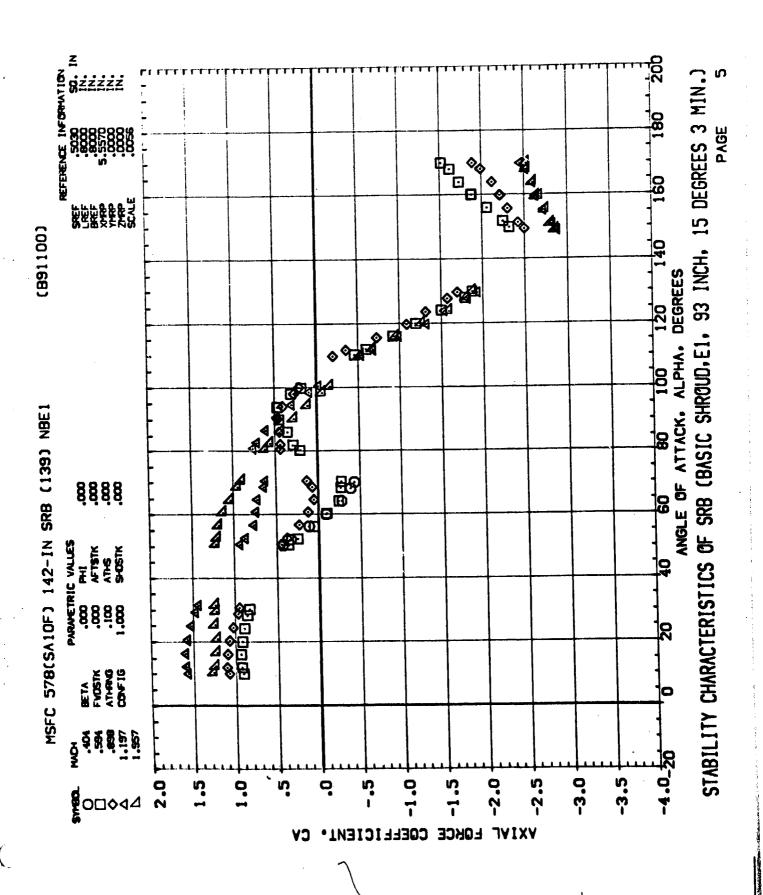


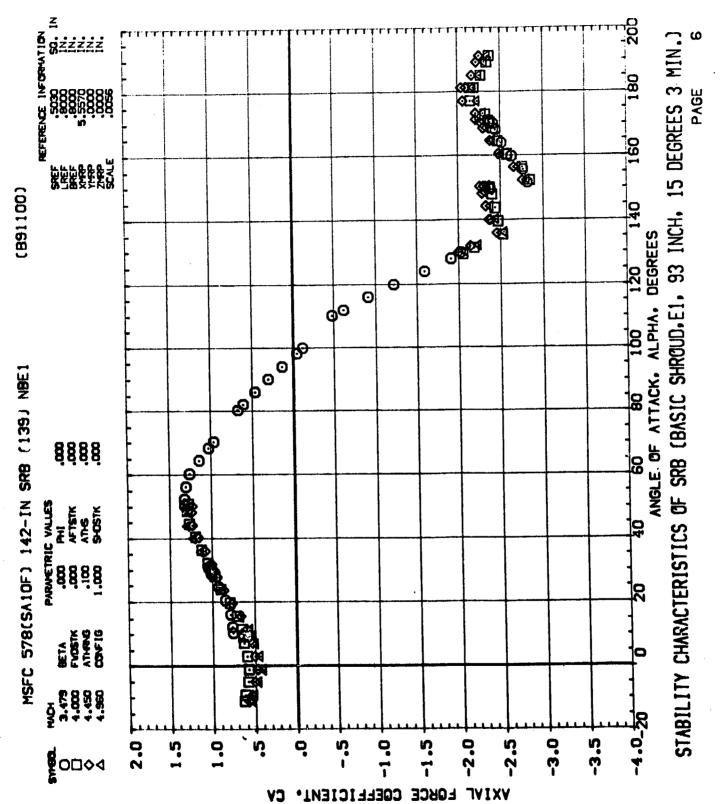


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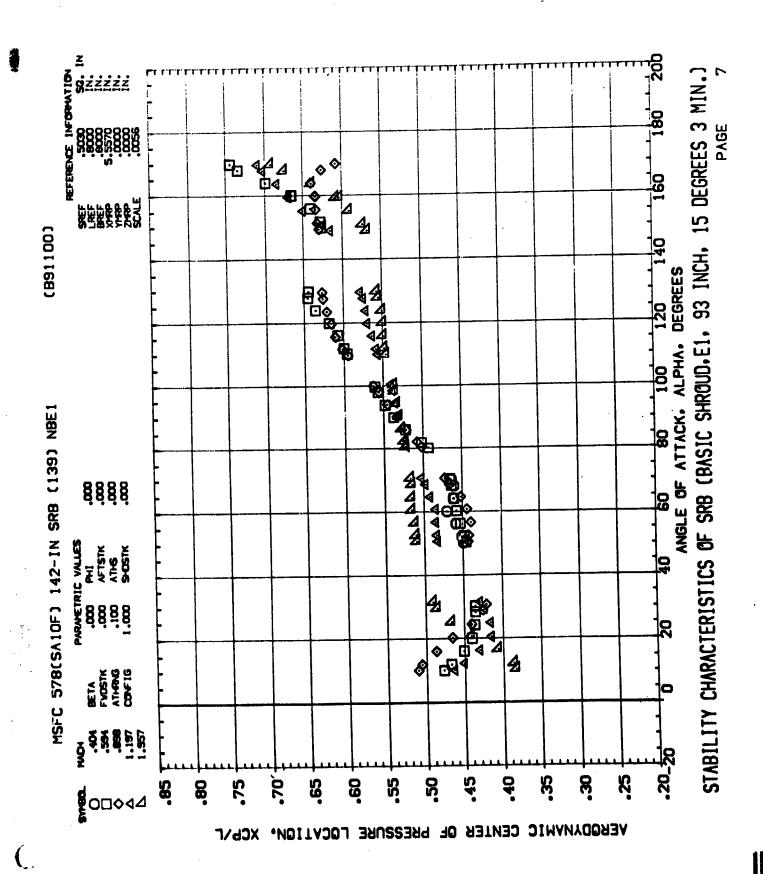


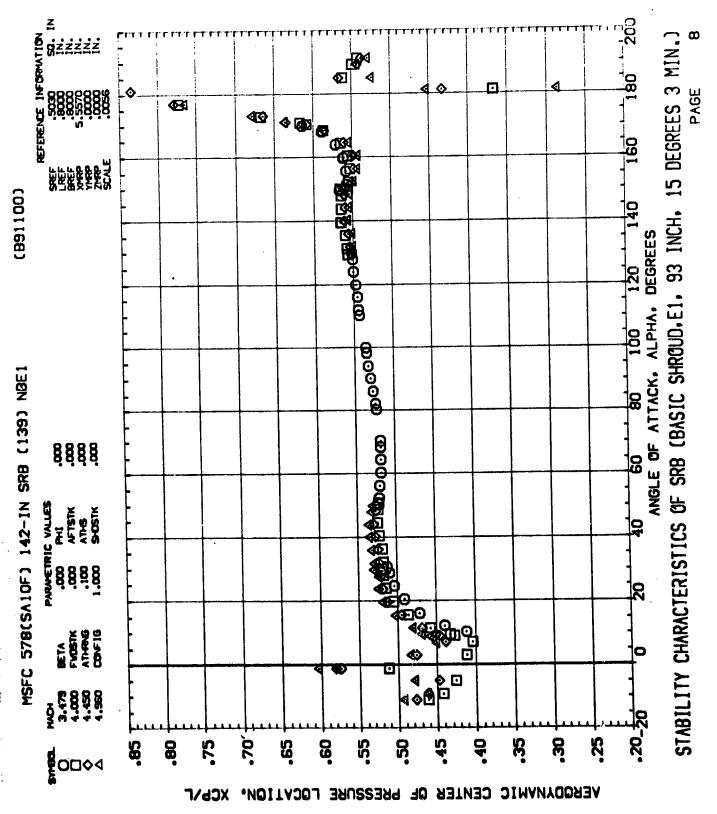




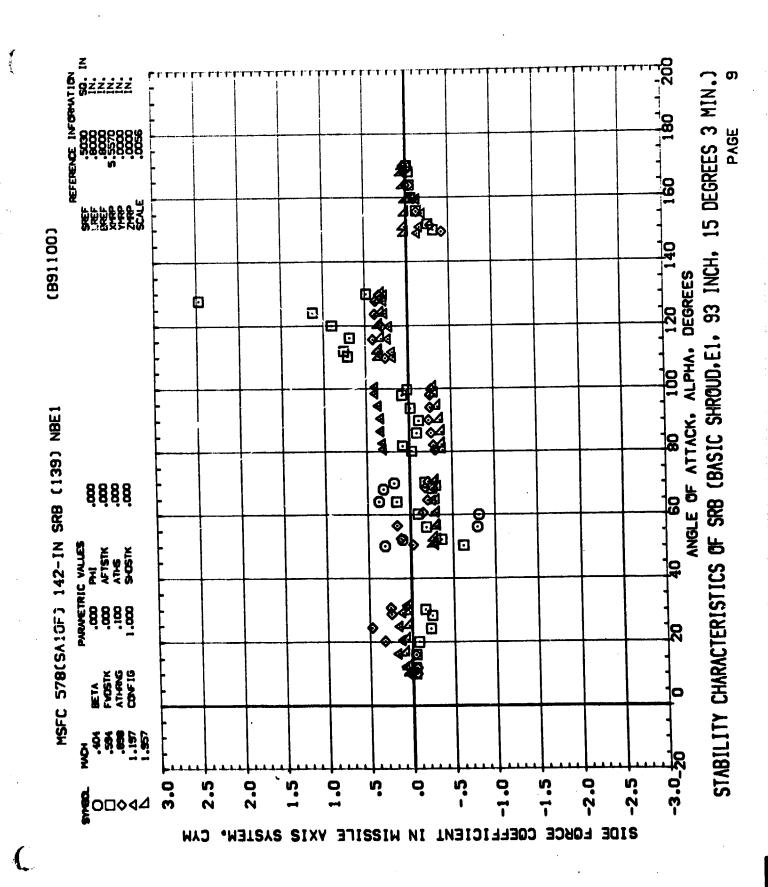


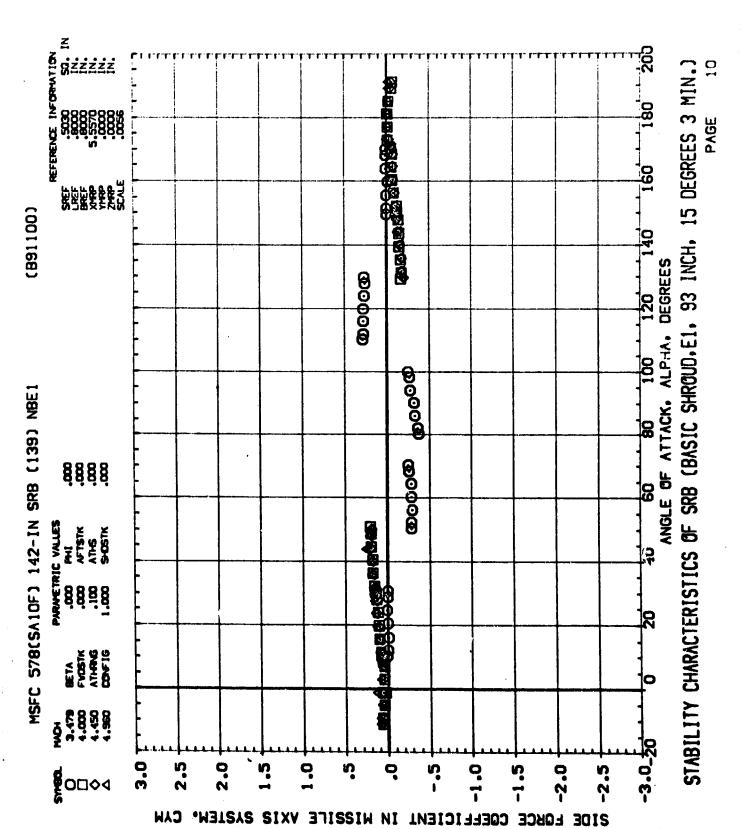




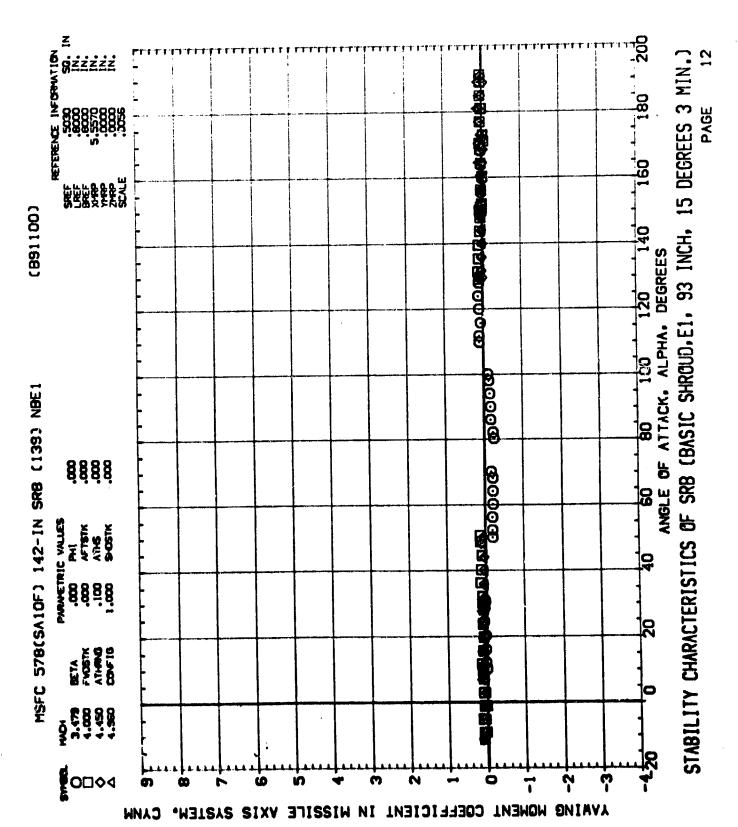




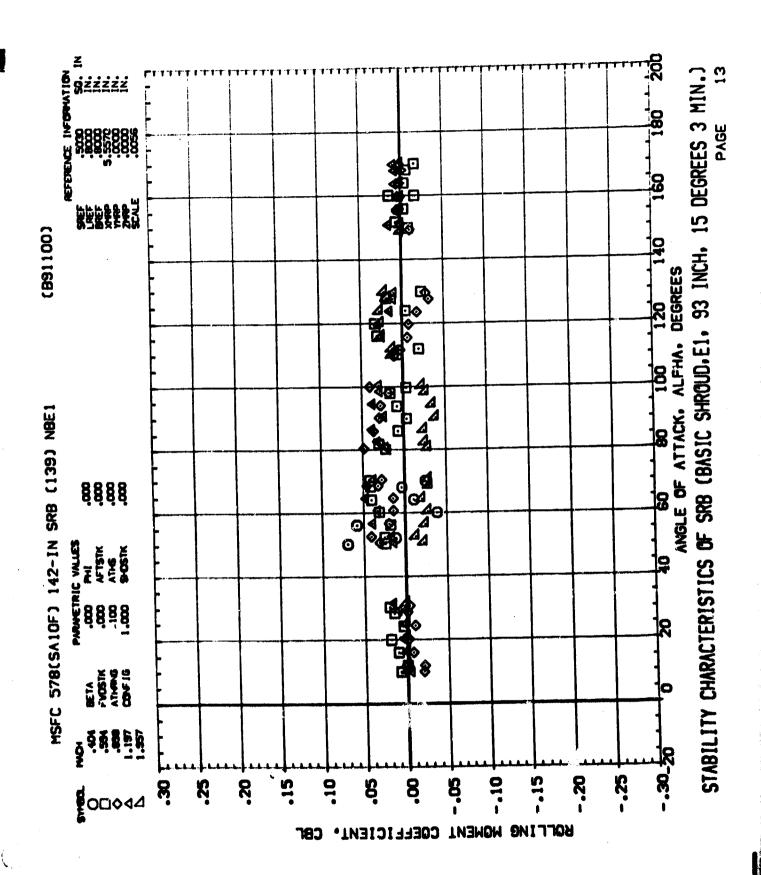


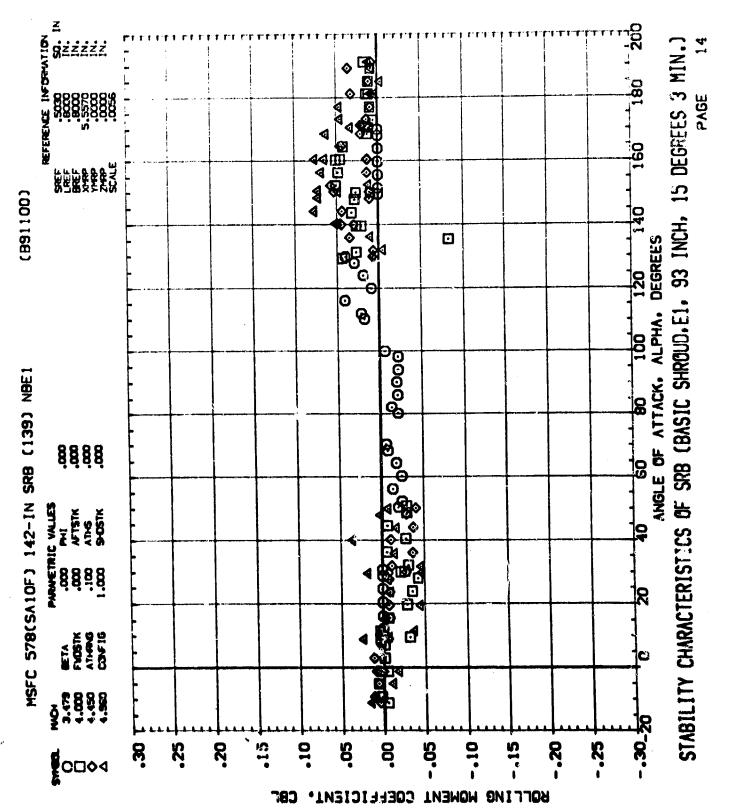










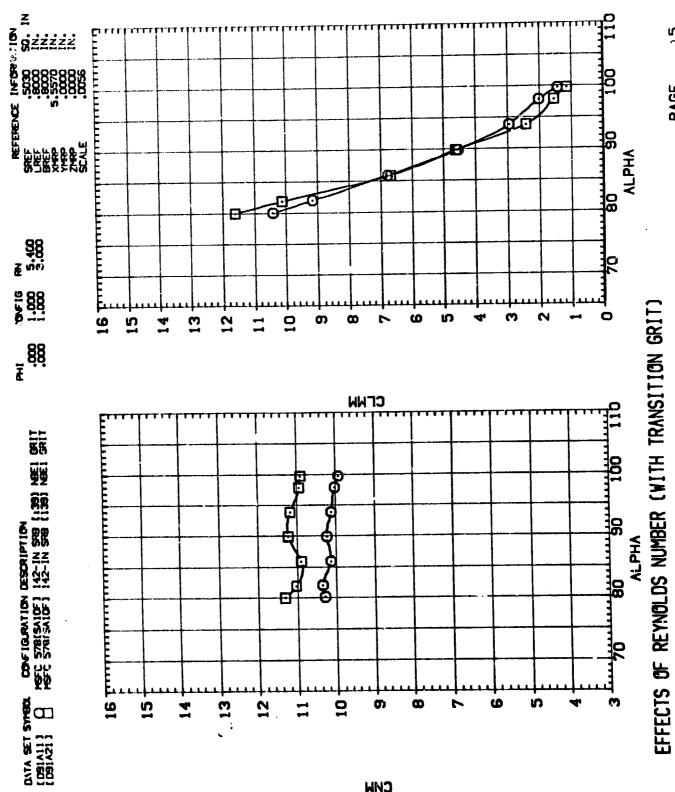


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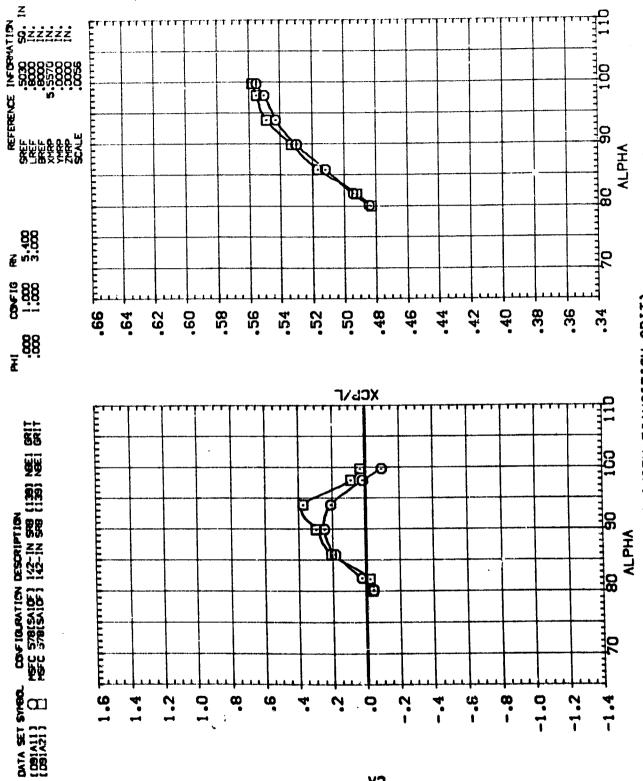




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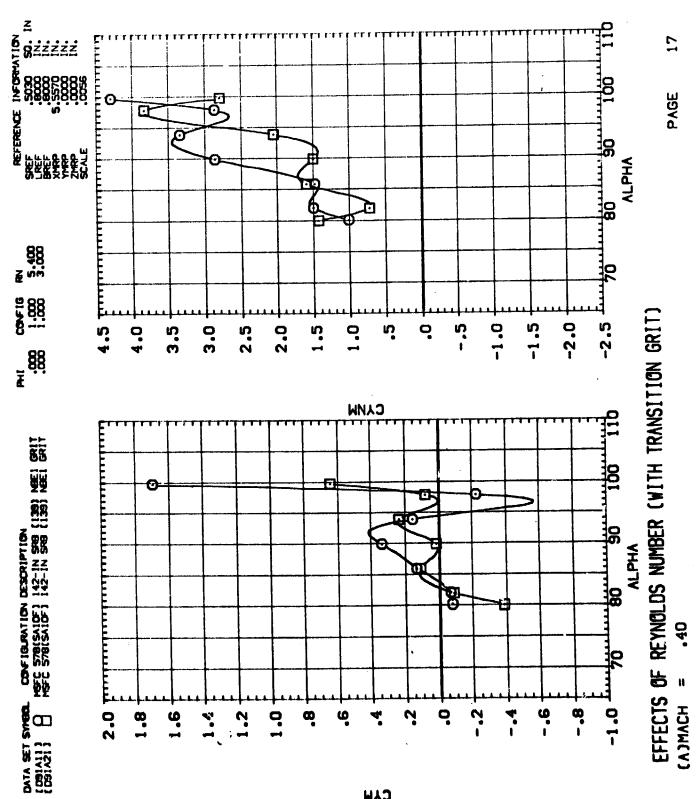


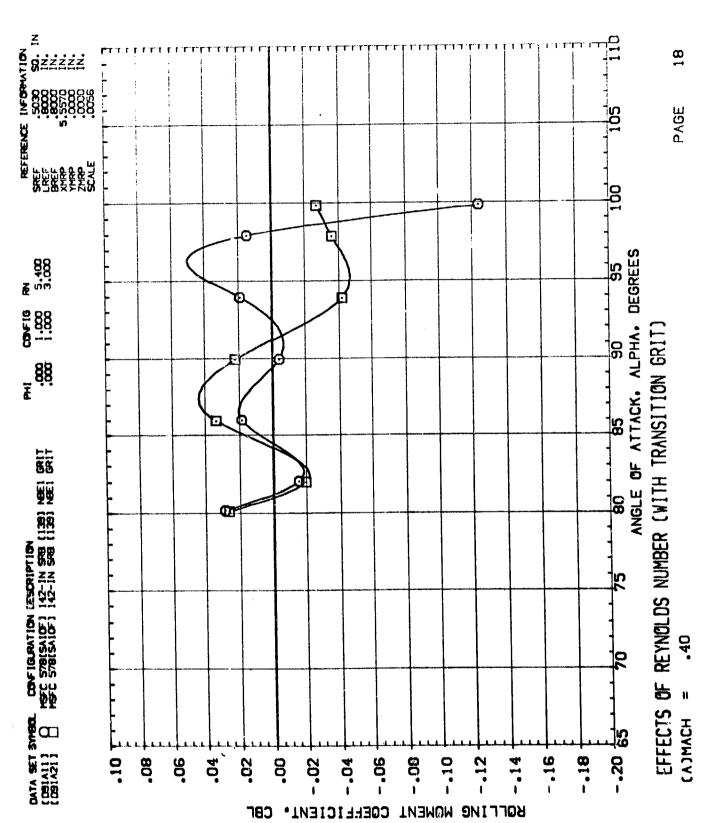
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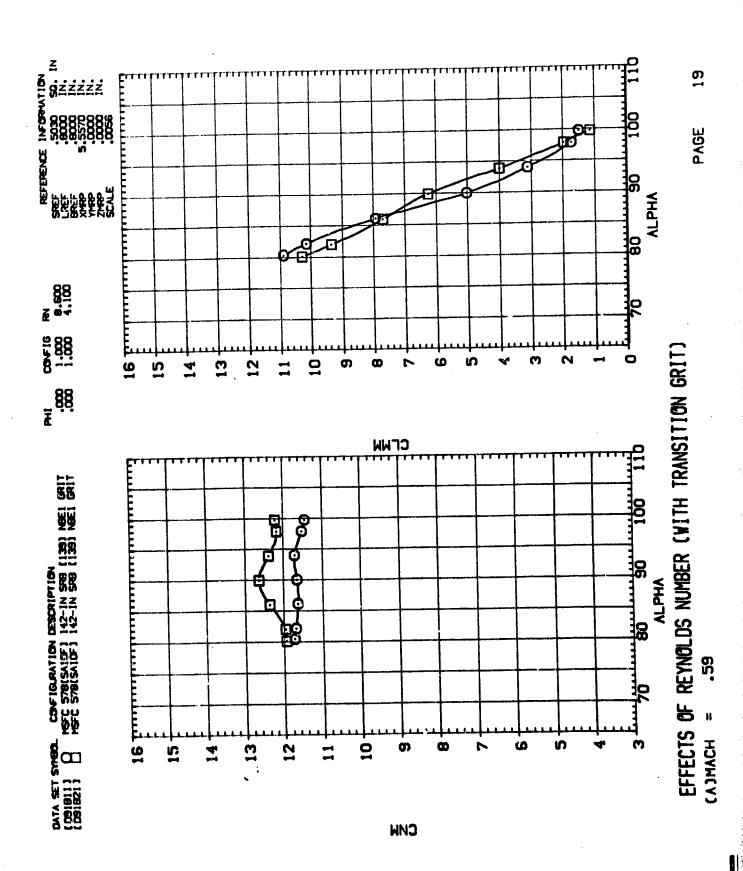
EFFECTS OF REYNOLDS NUMBER (WITH TRANSITION GRIT) (A)MACH

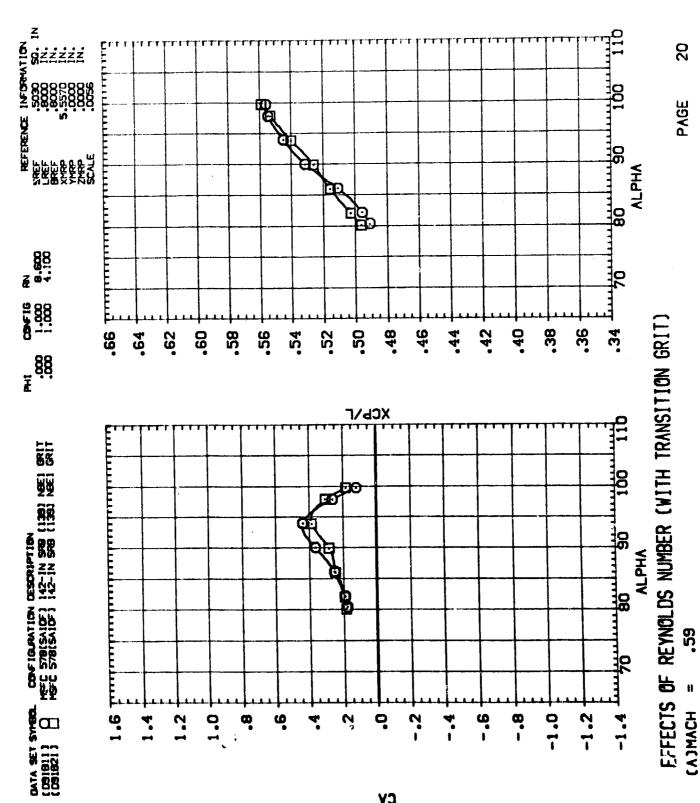
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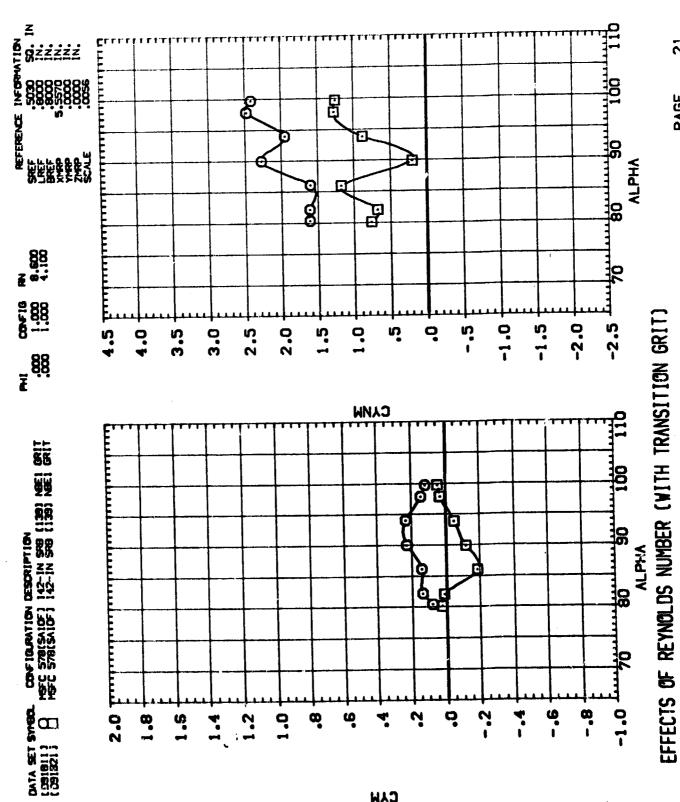




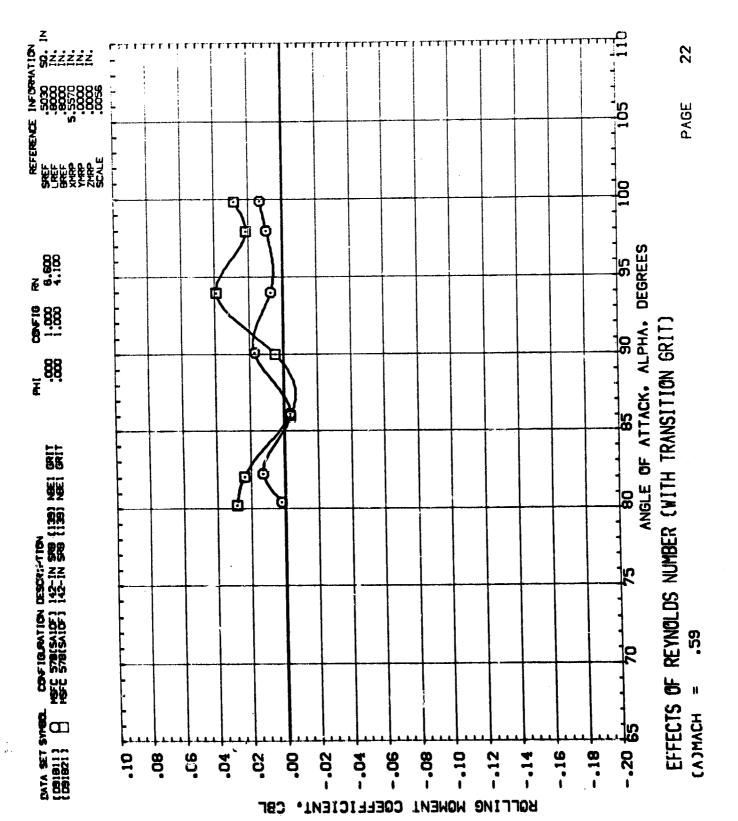


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(A)MACH



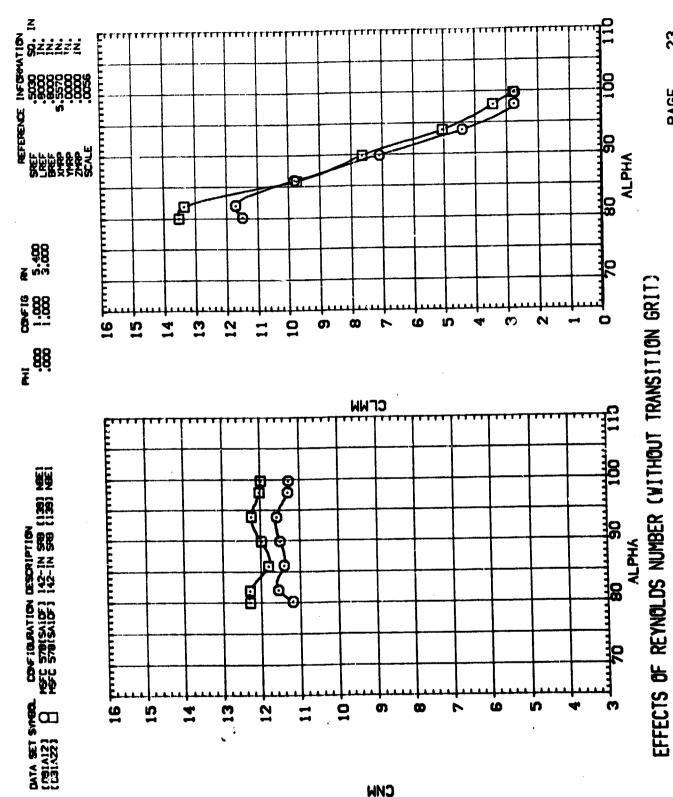
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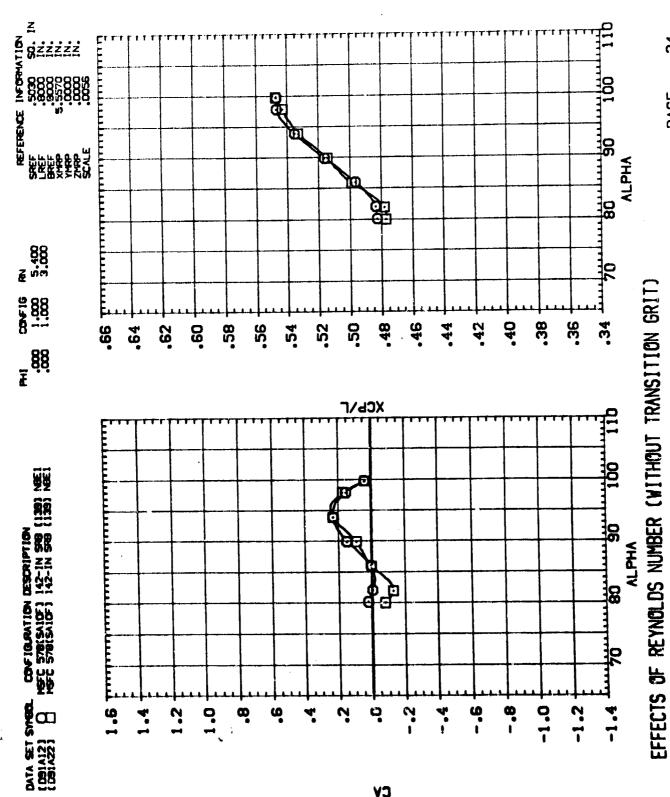
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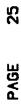




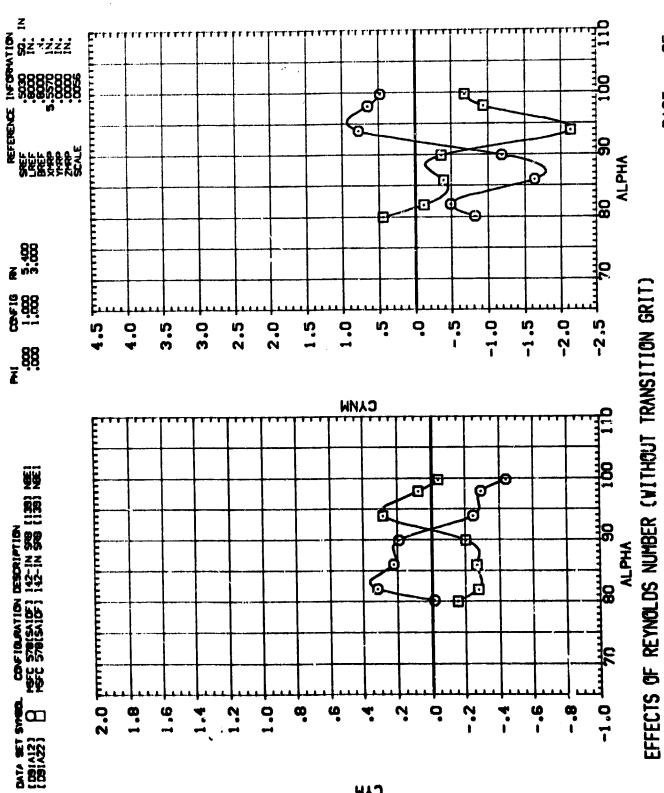
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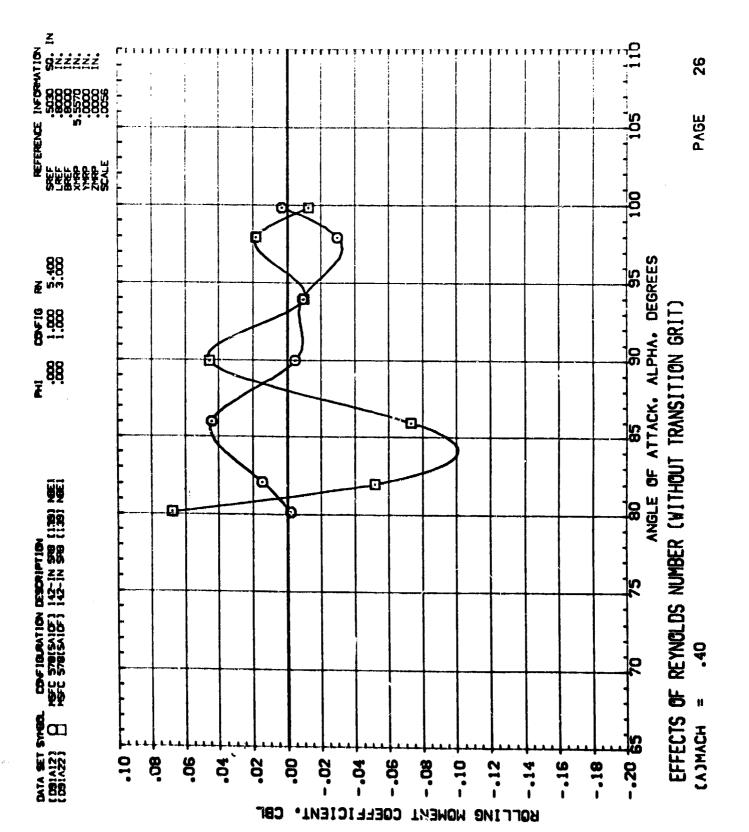
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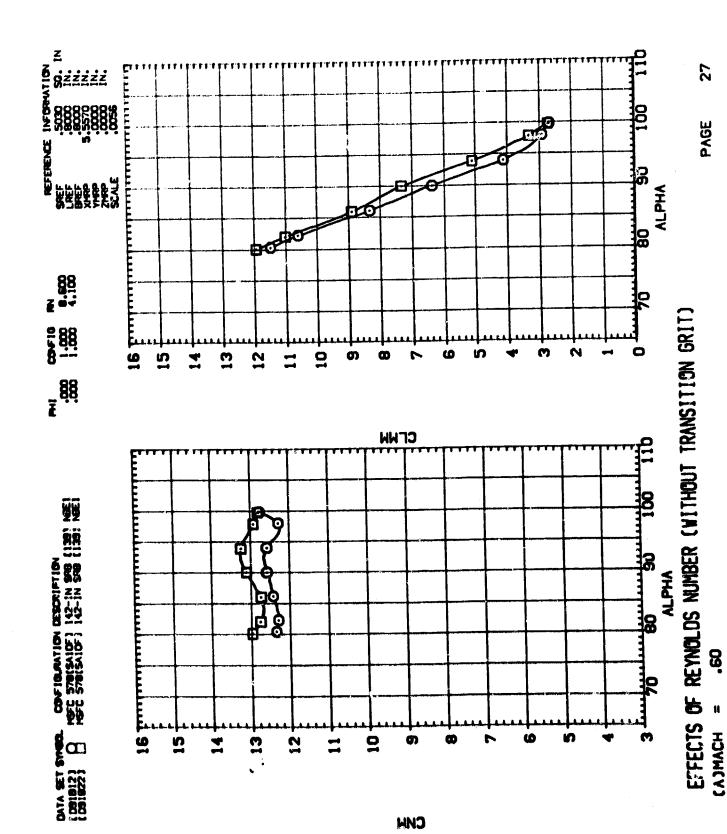
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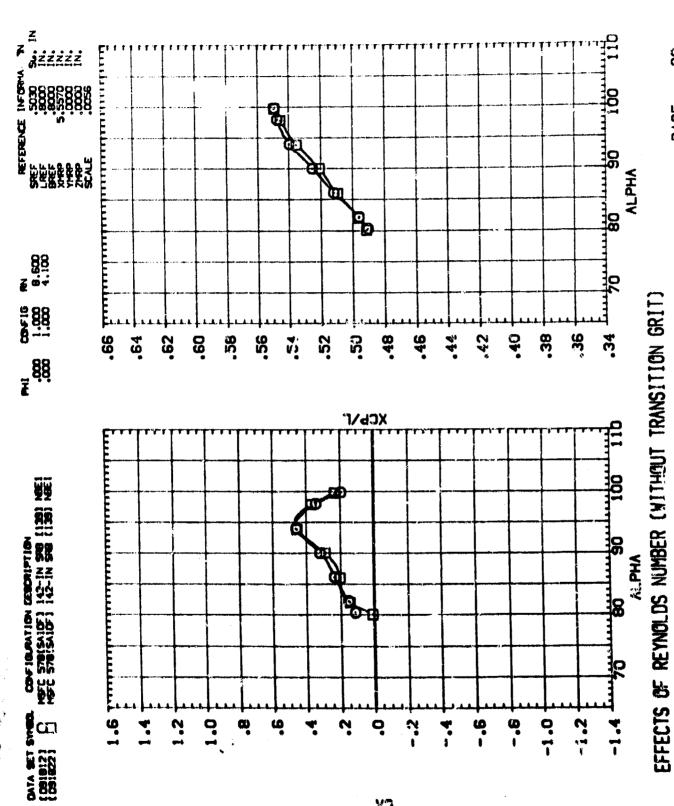
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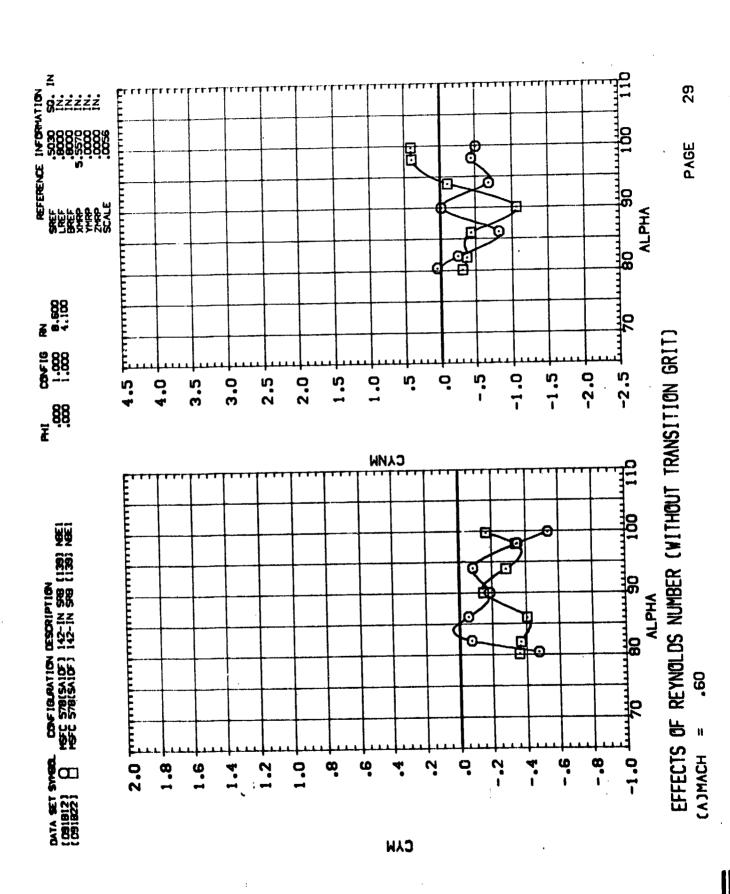
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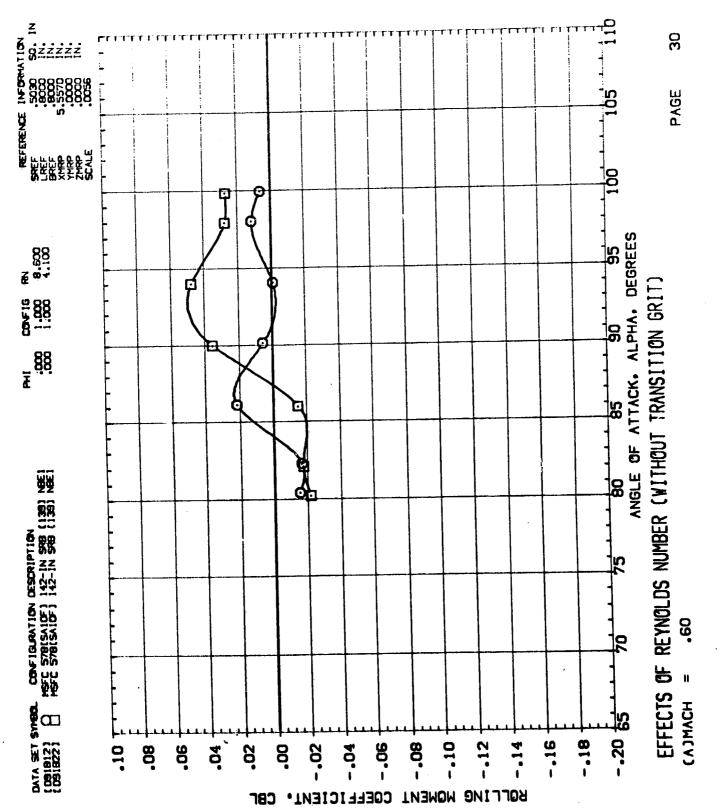


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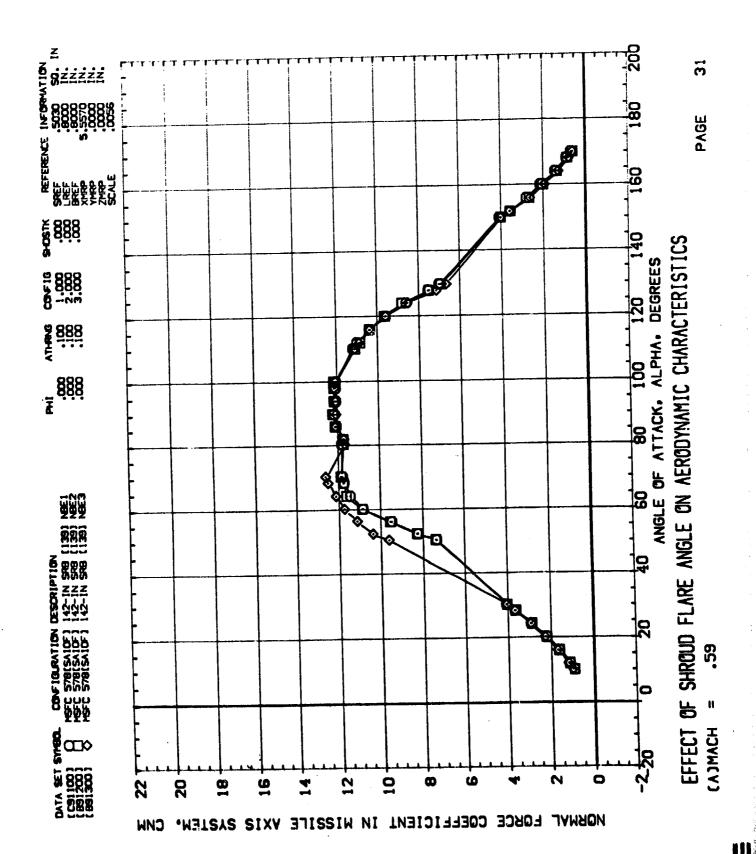
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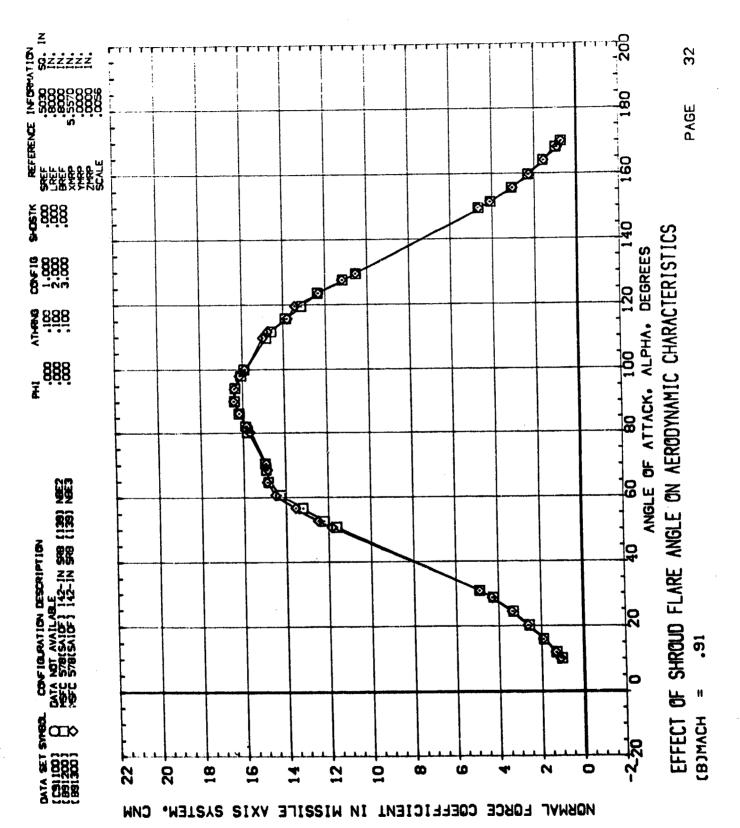
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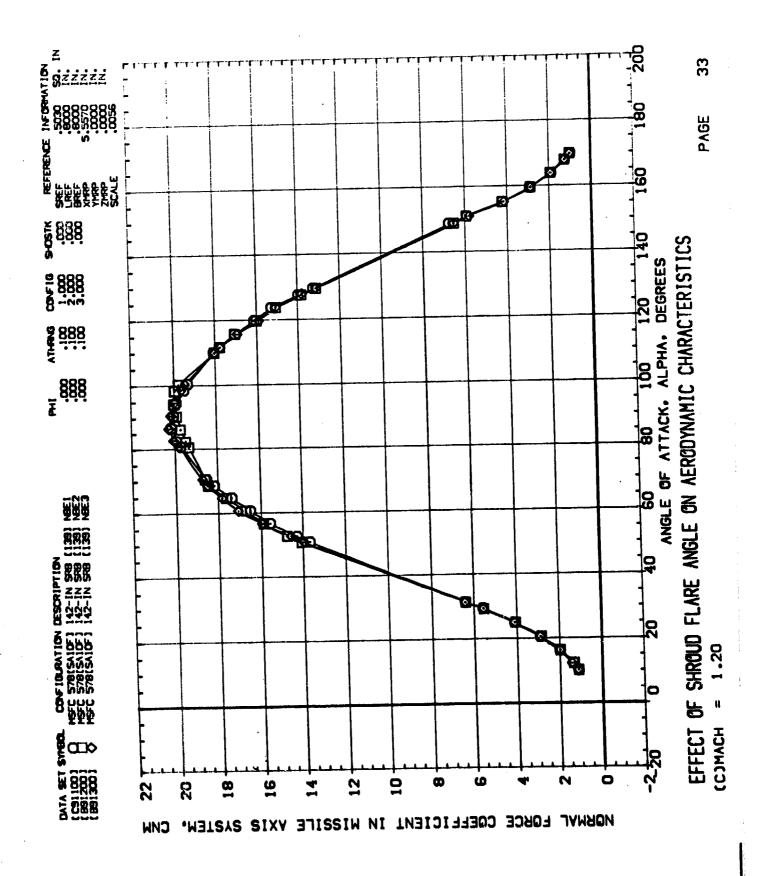


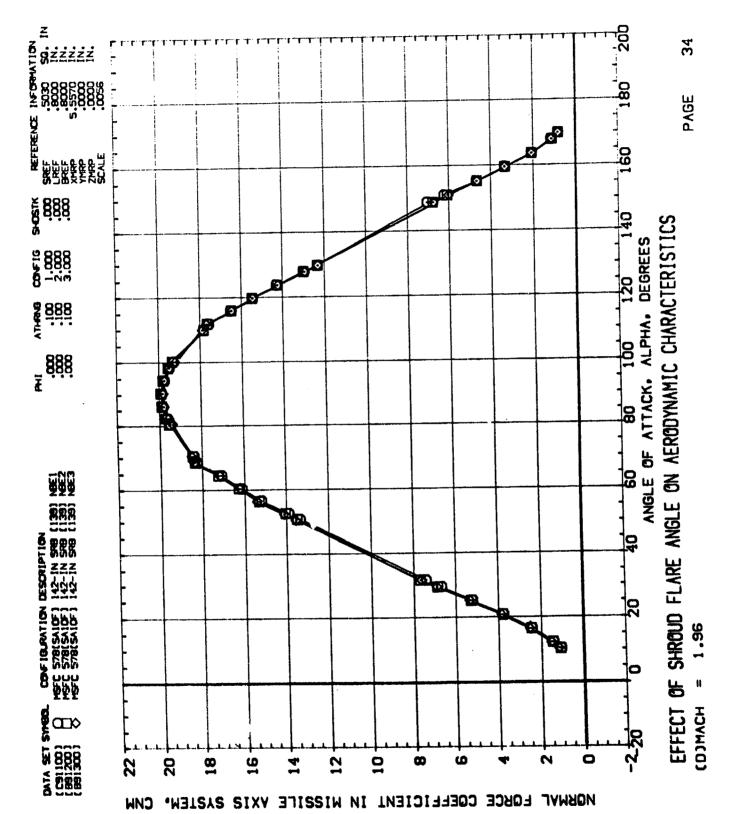




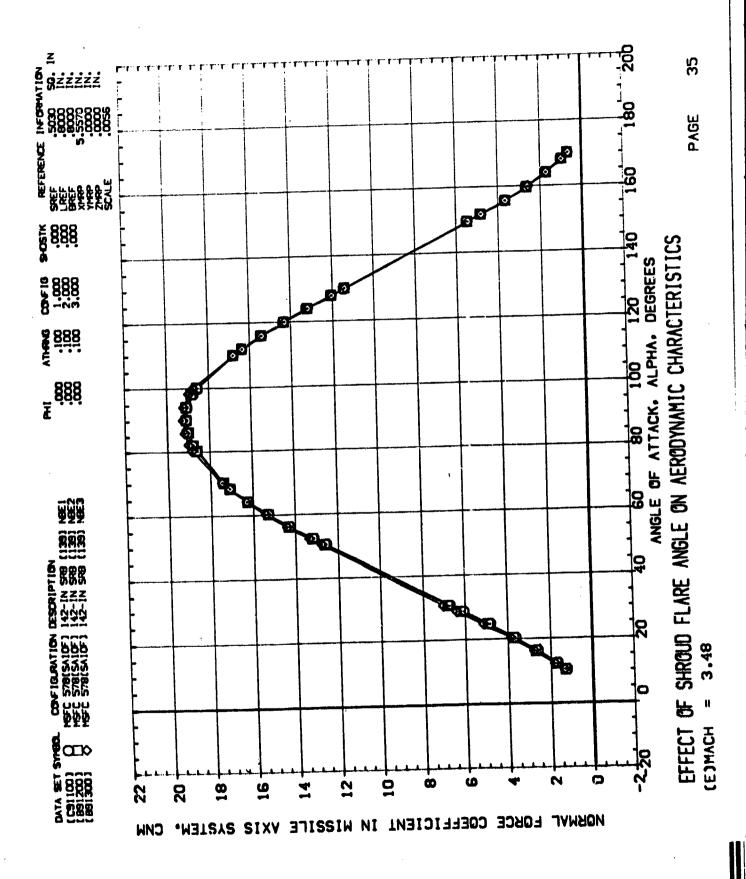


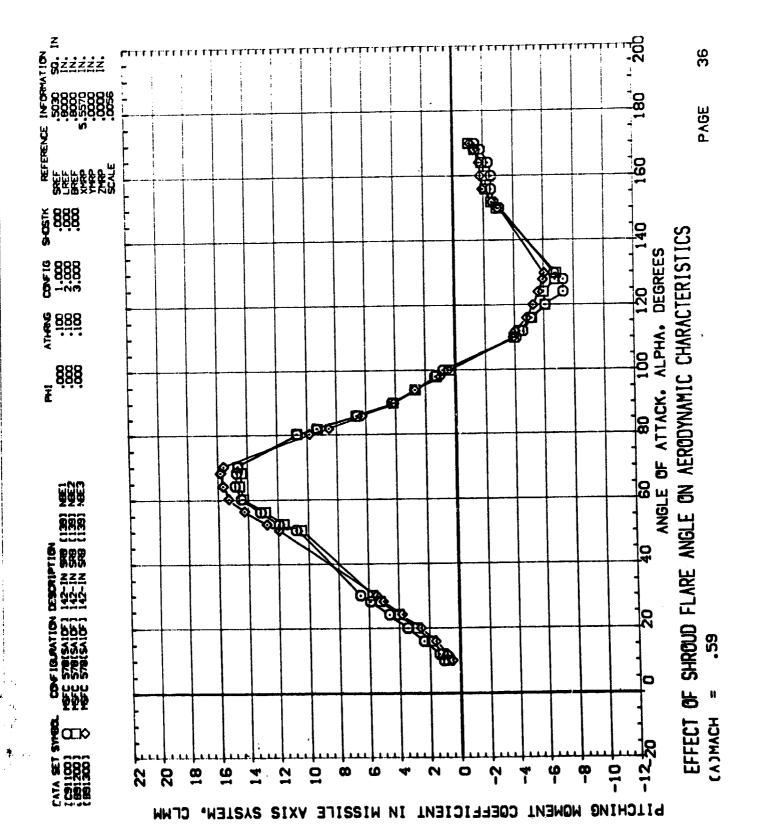




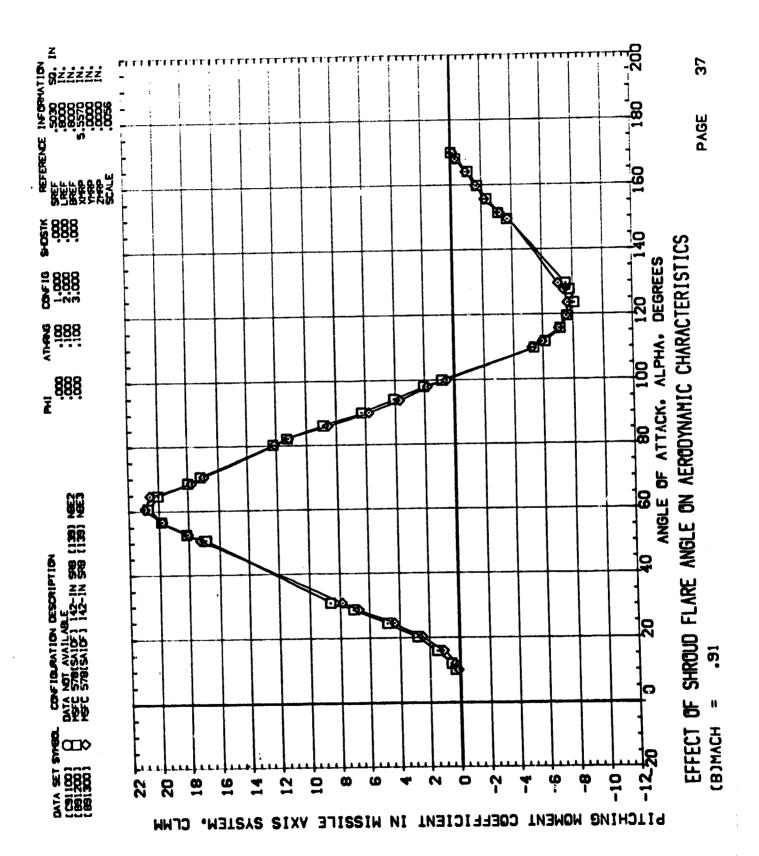


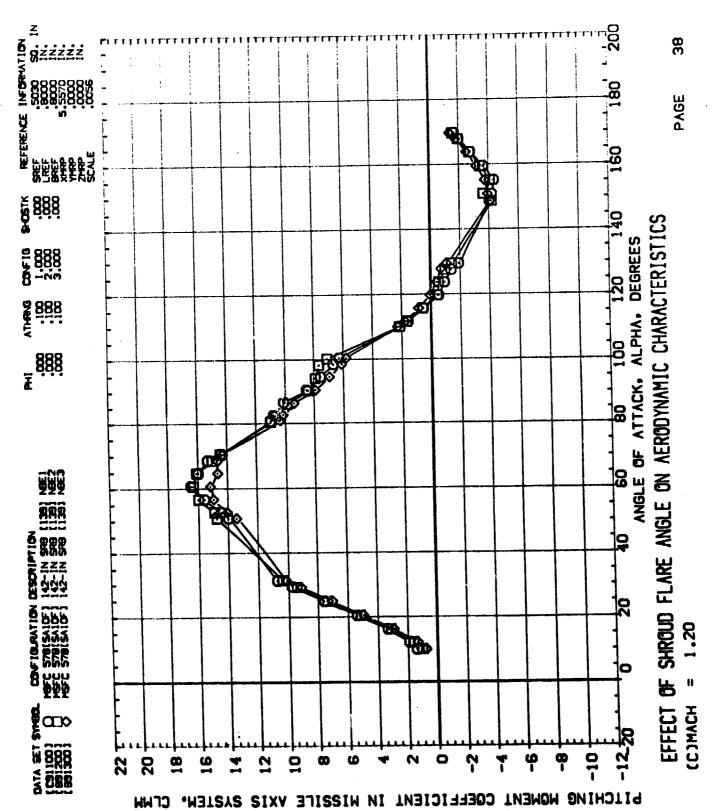




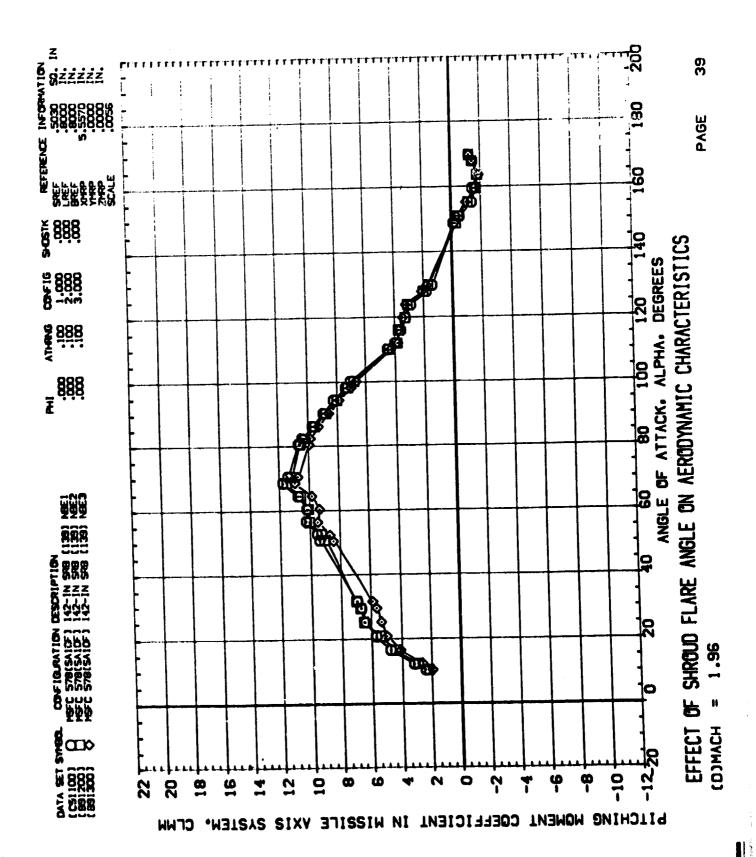


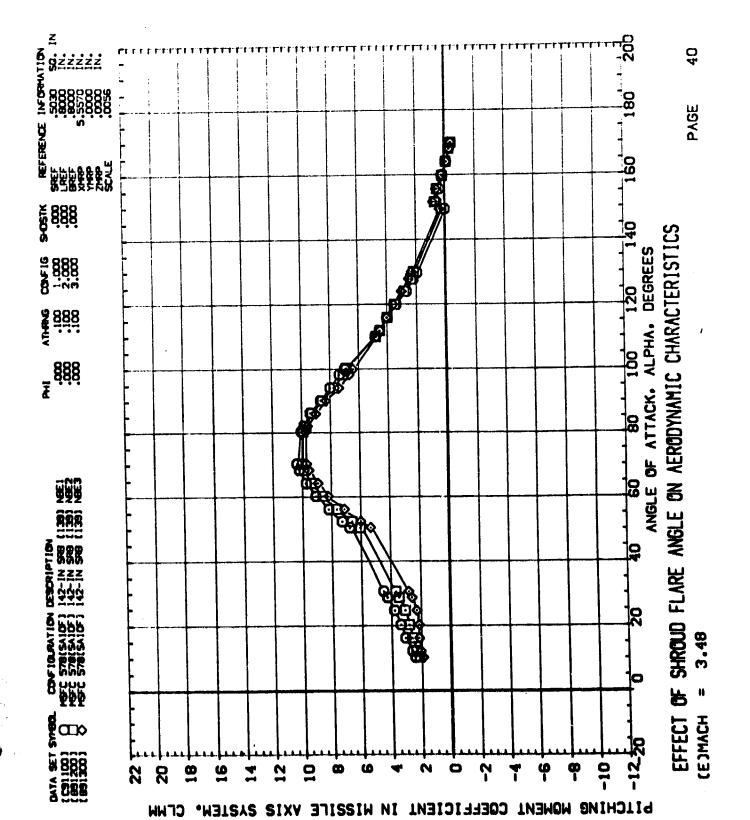




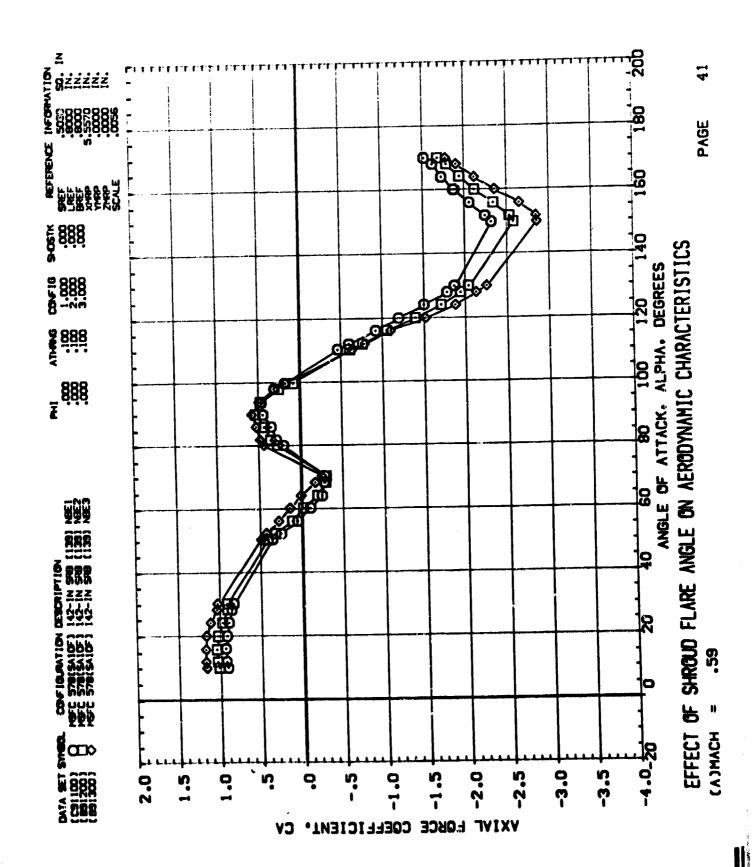


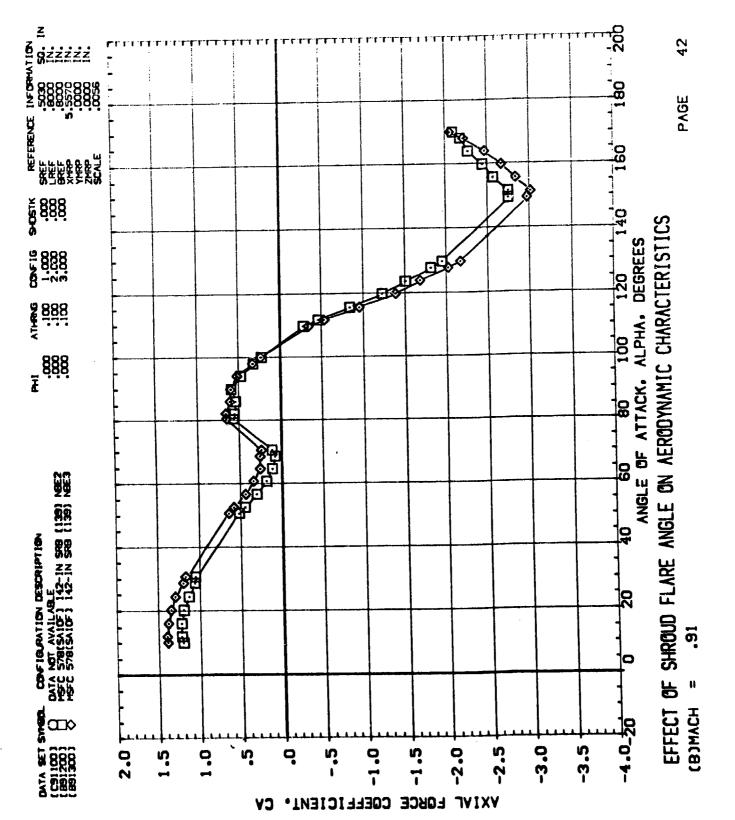




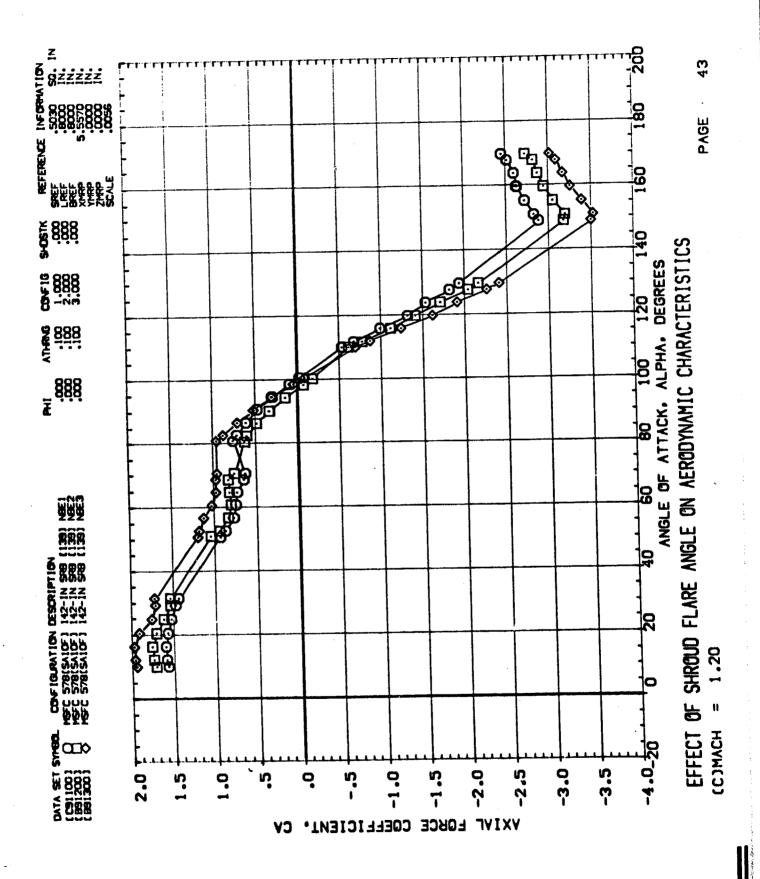




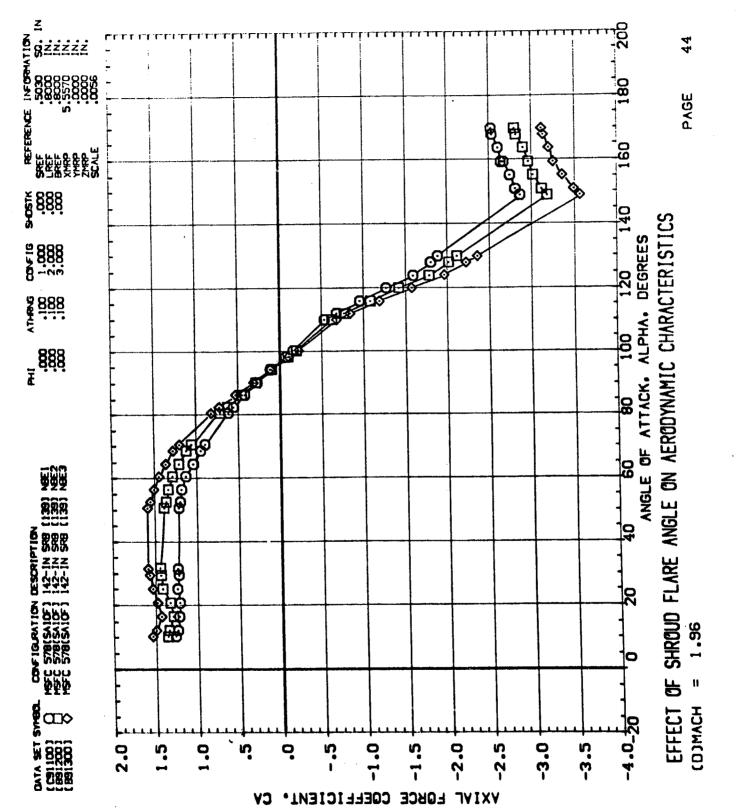




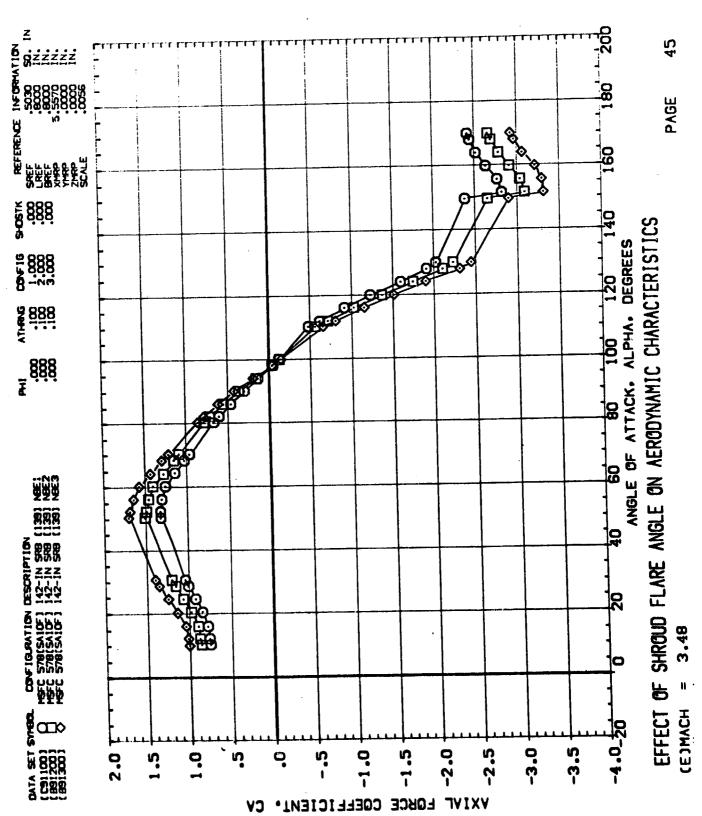


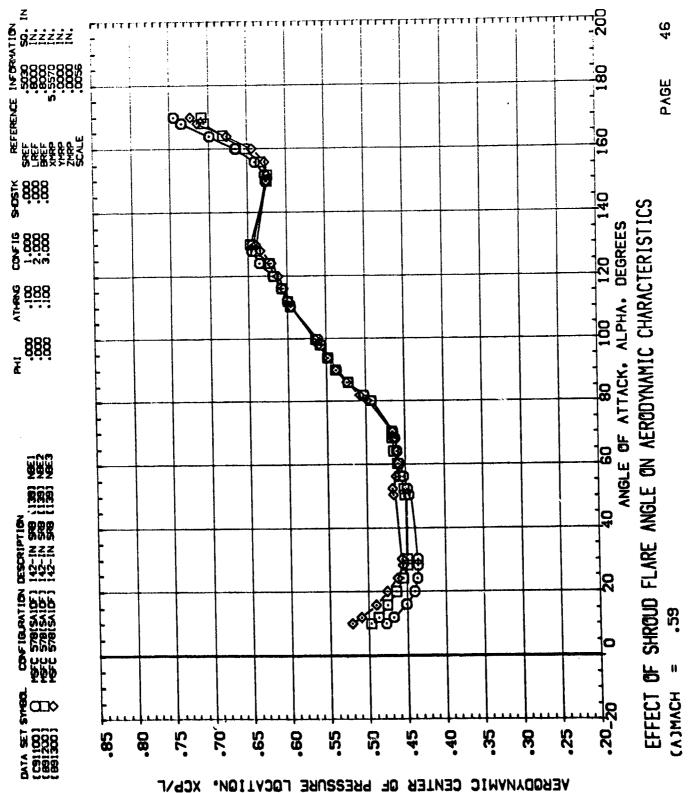


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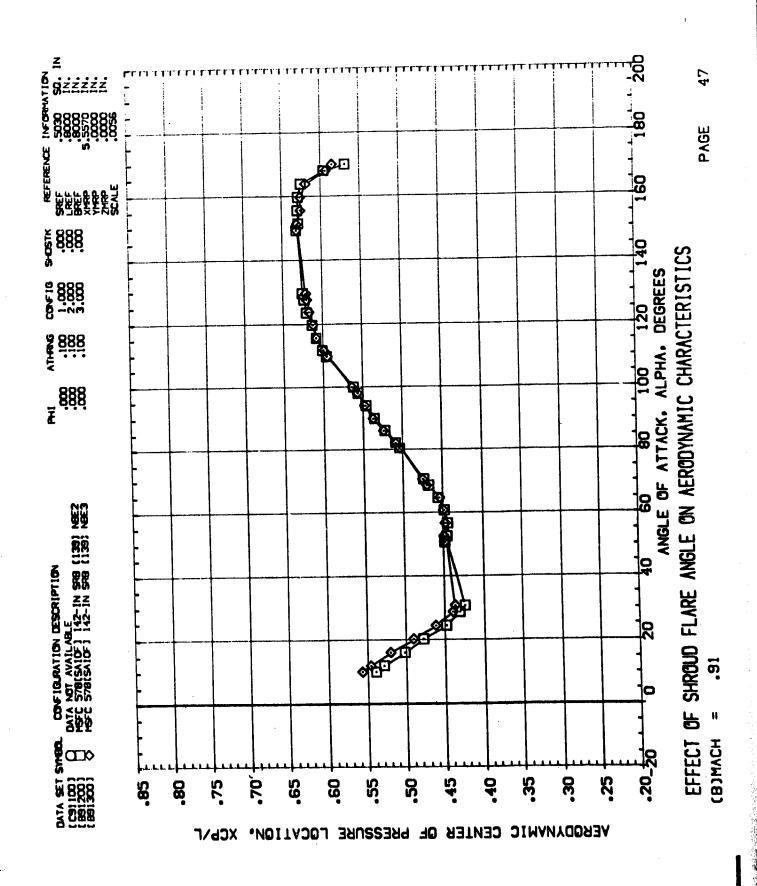




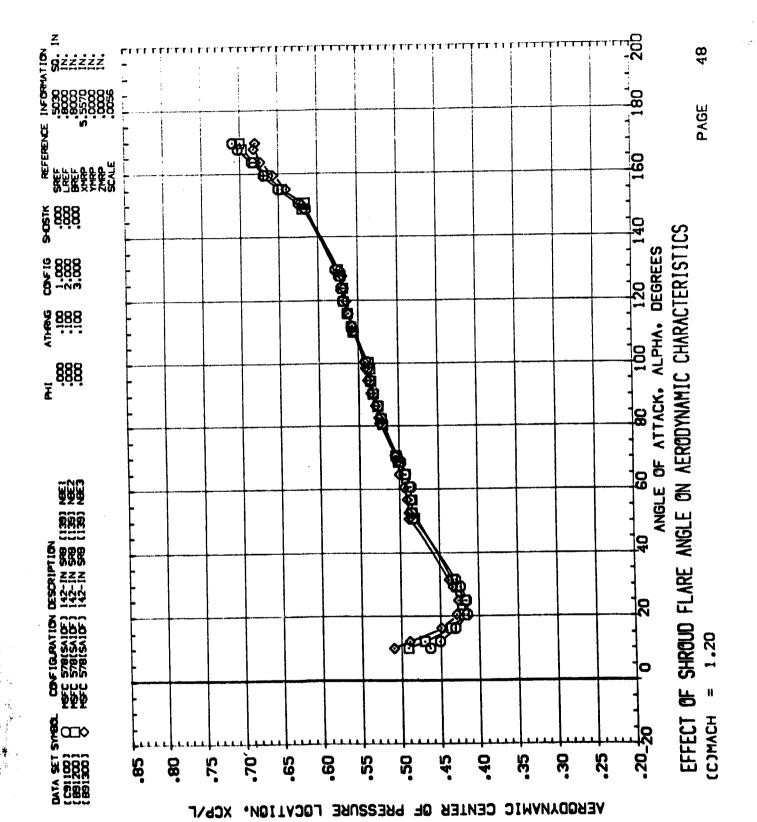




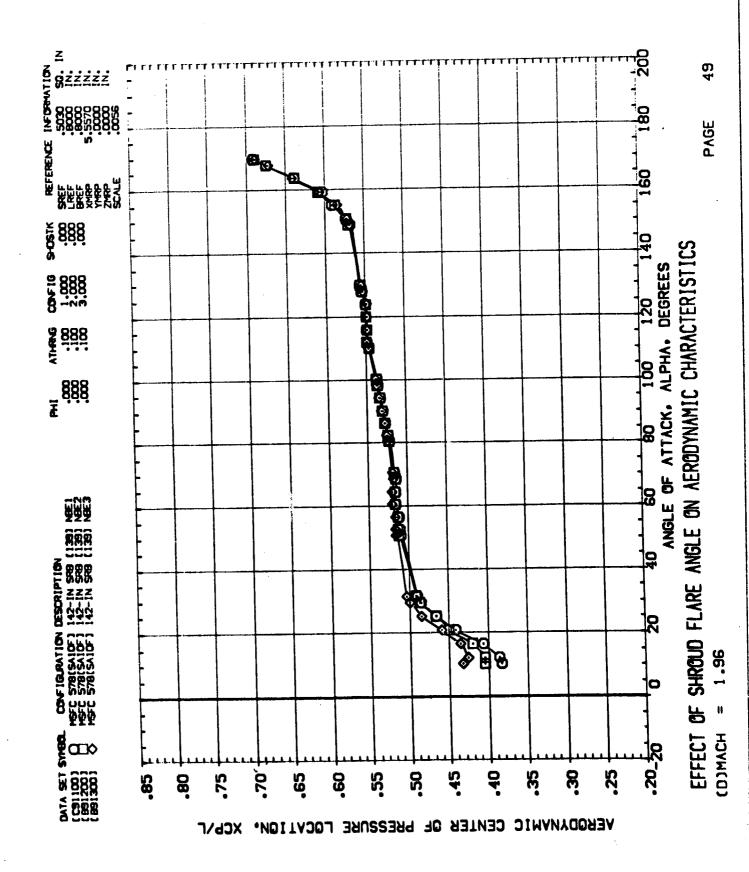


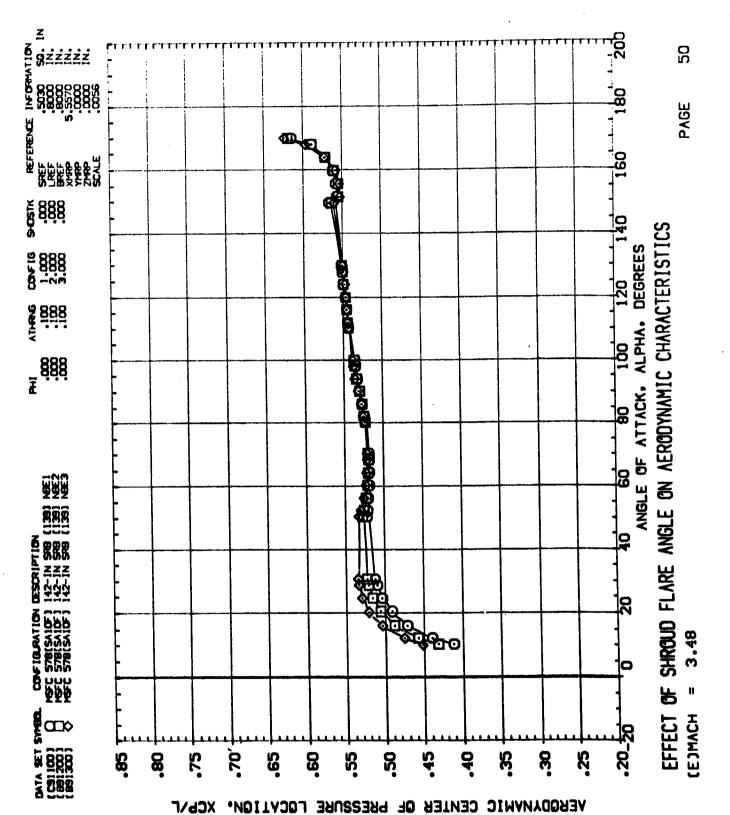


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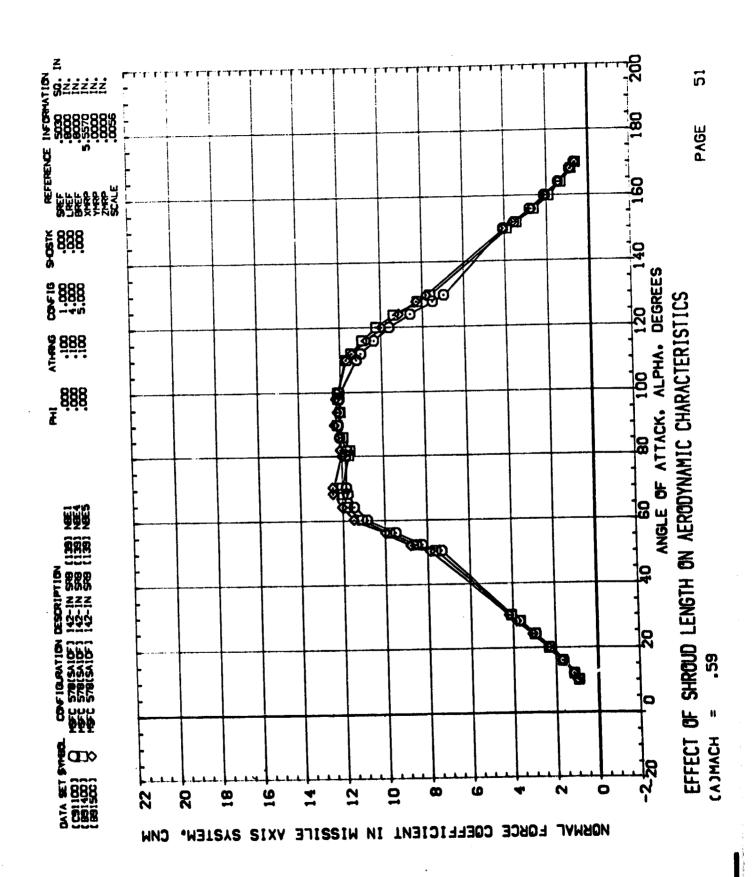


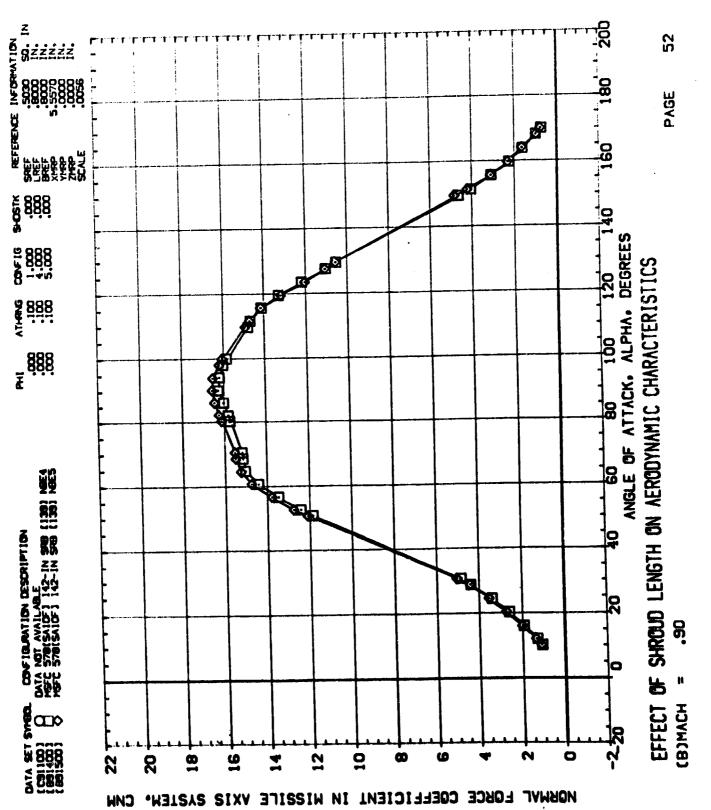




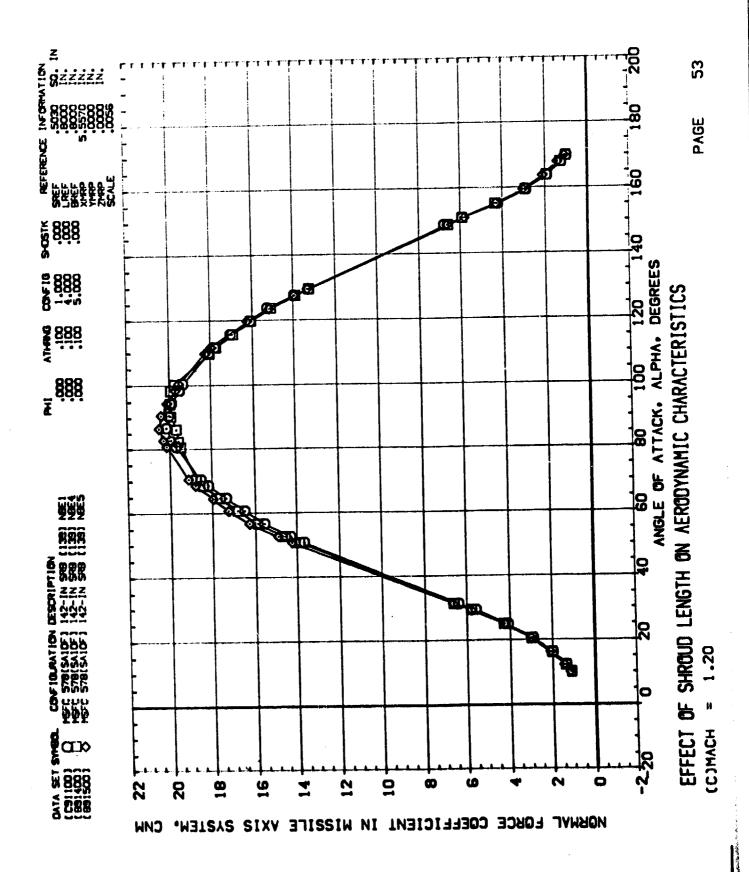
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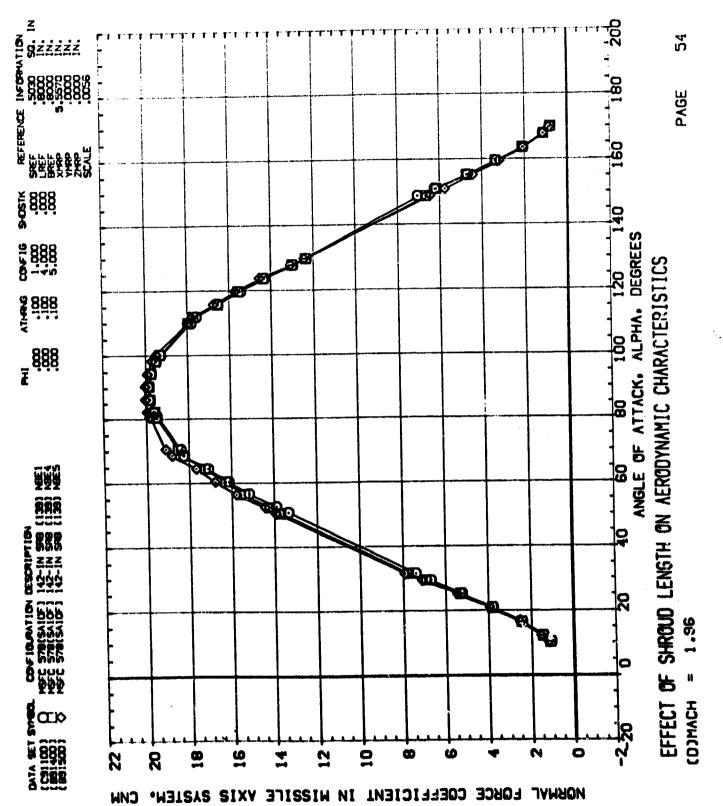




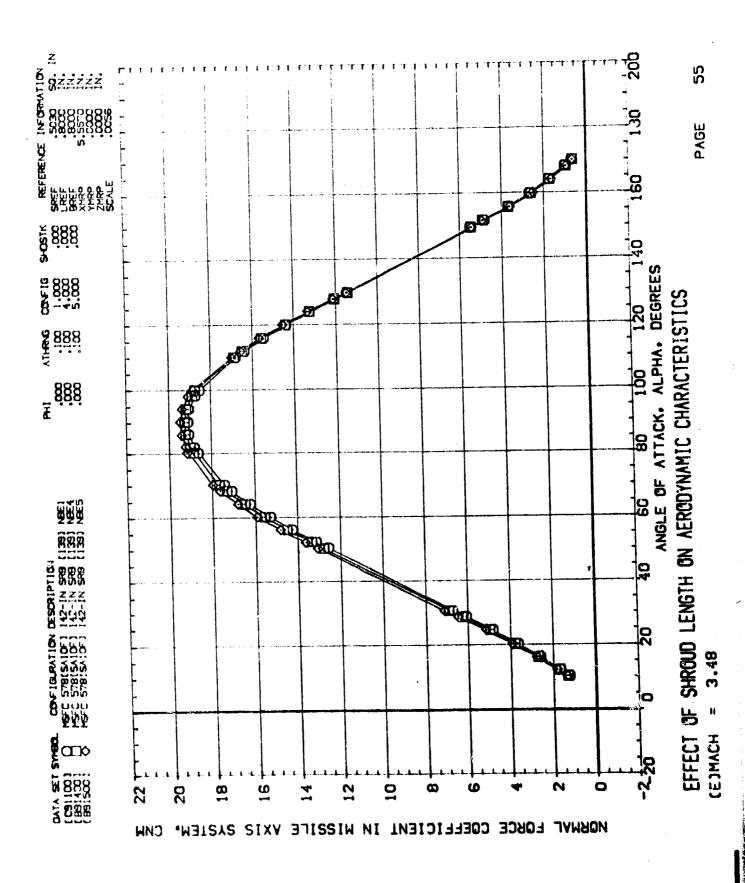


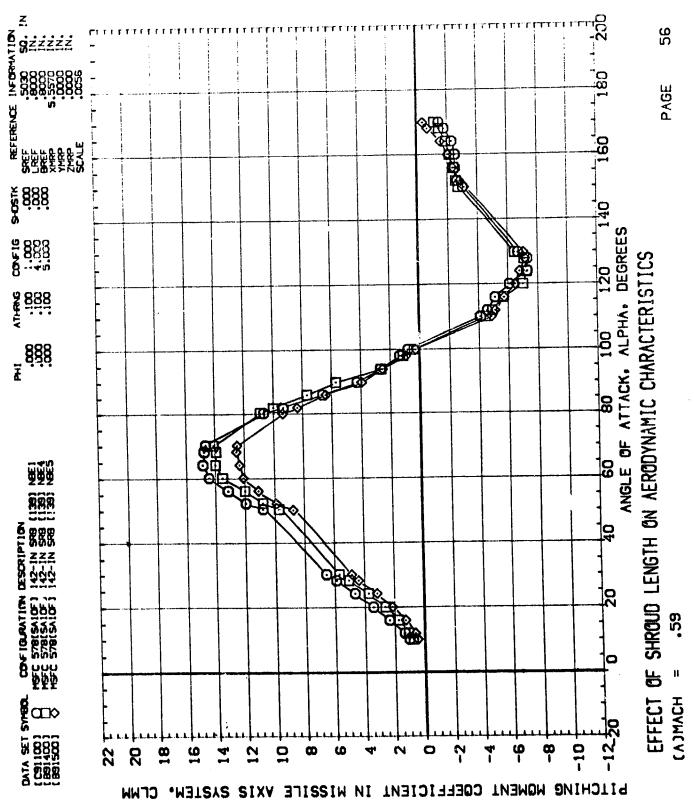




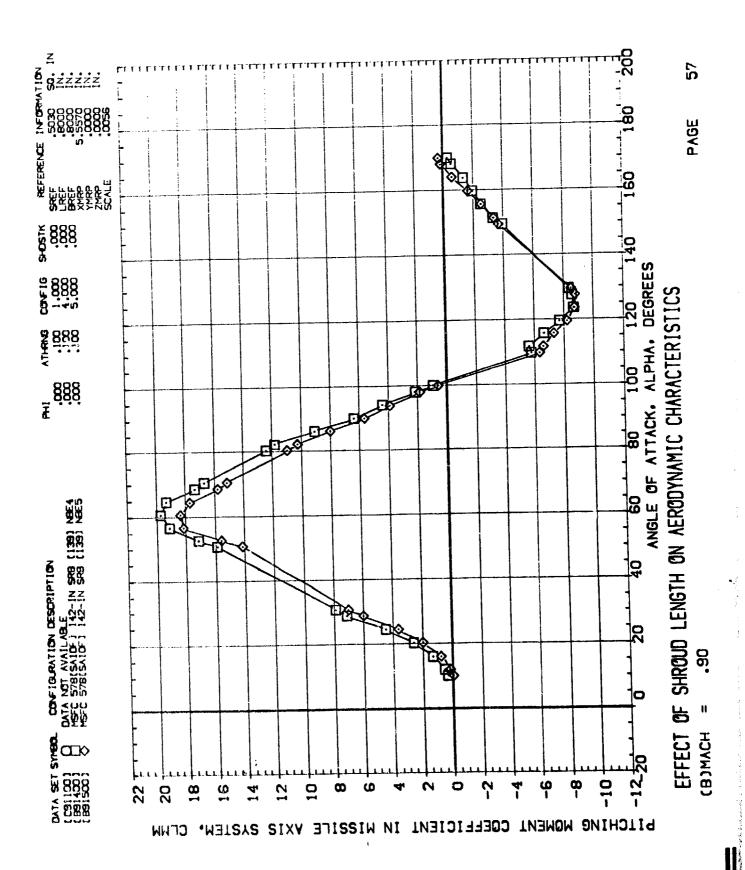




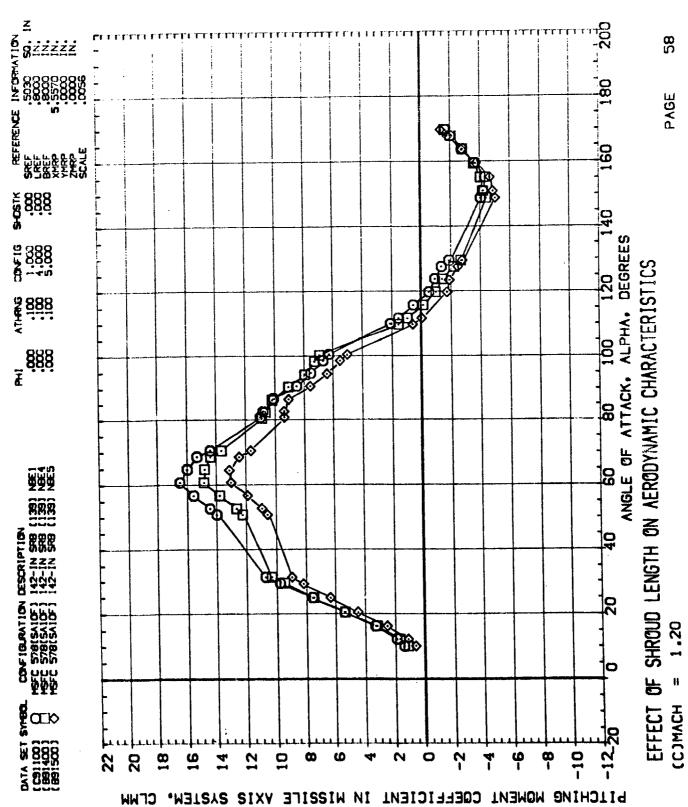




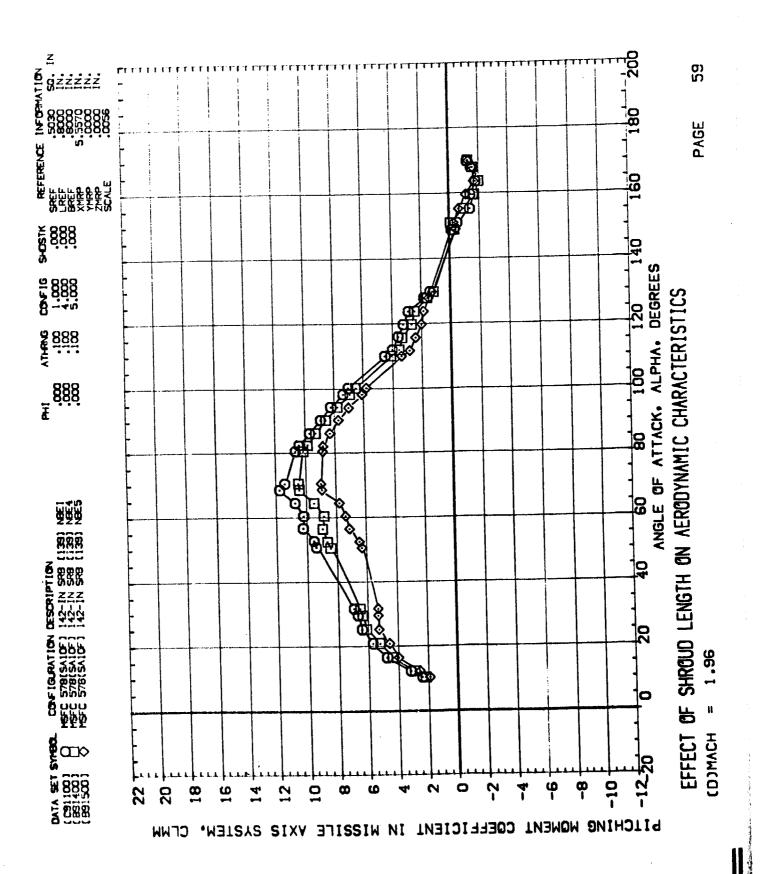


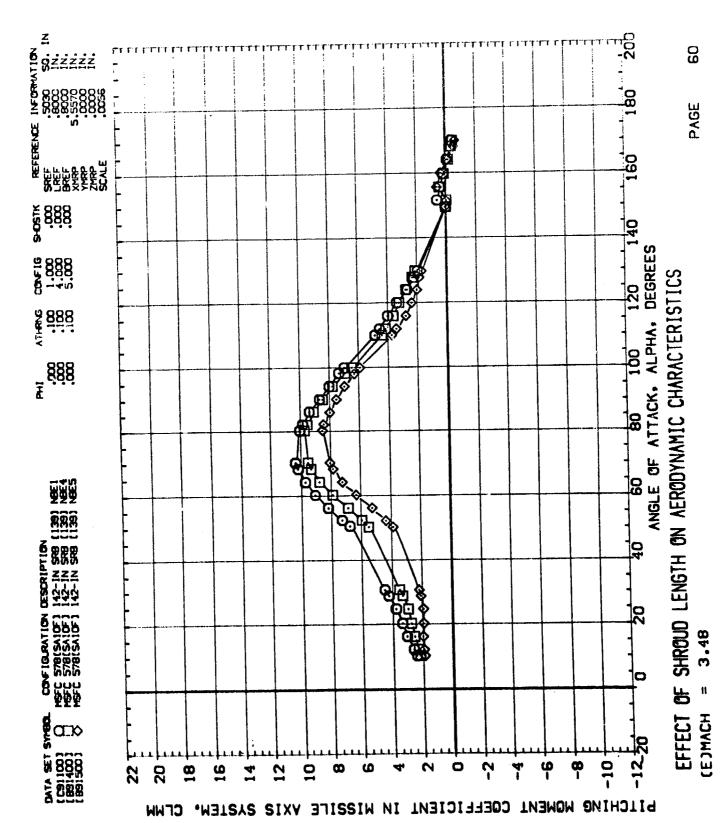


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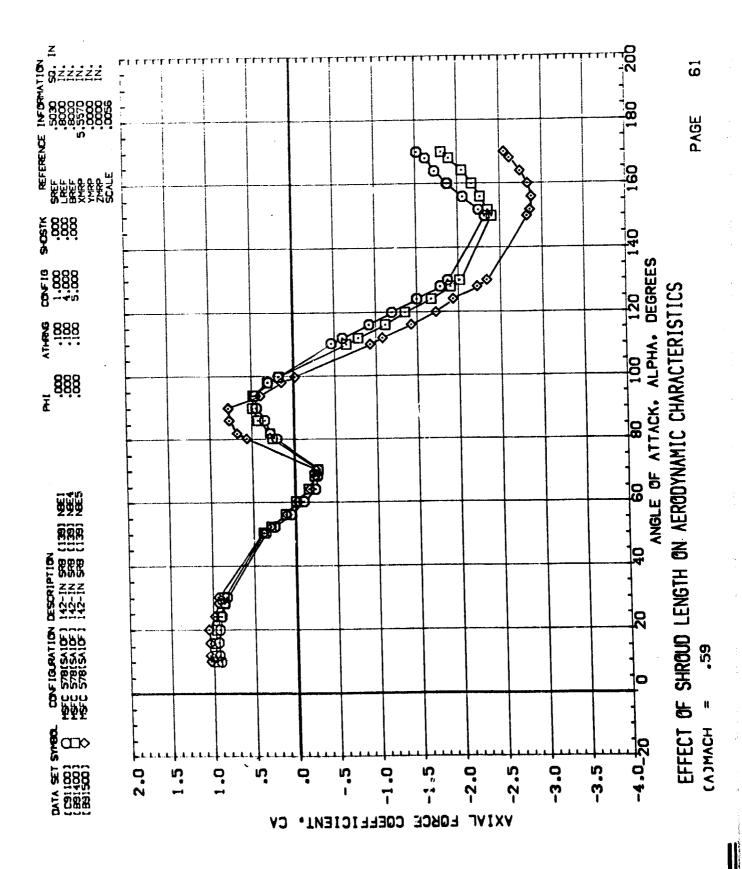


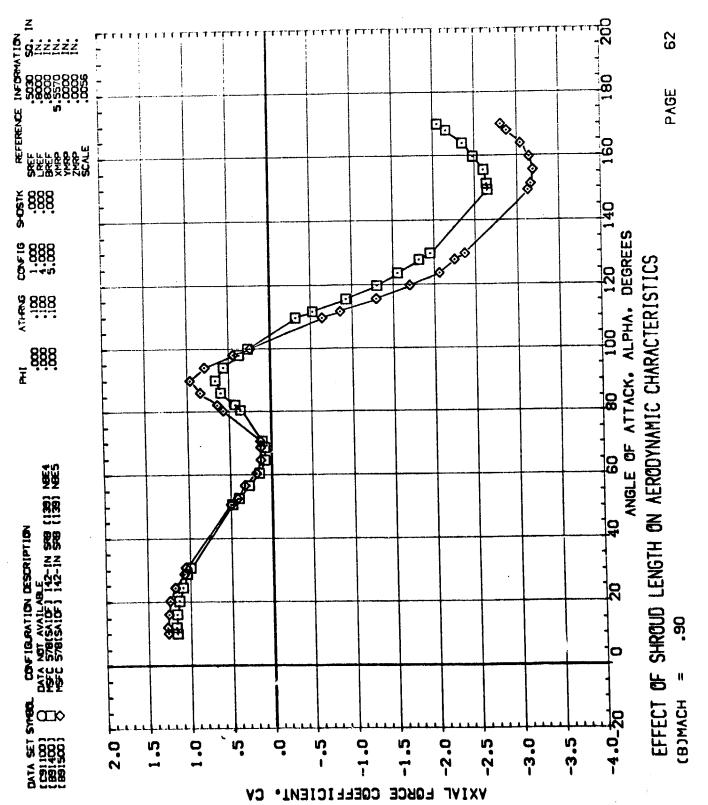




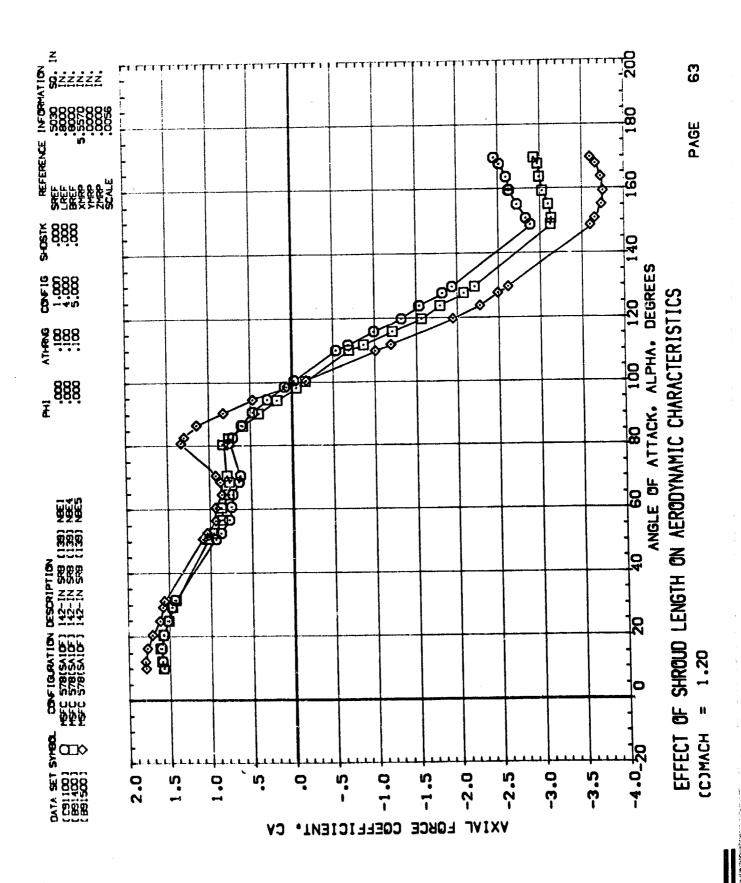


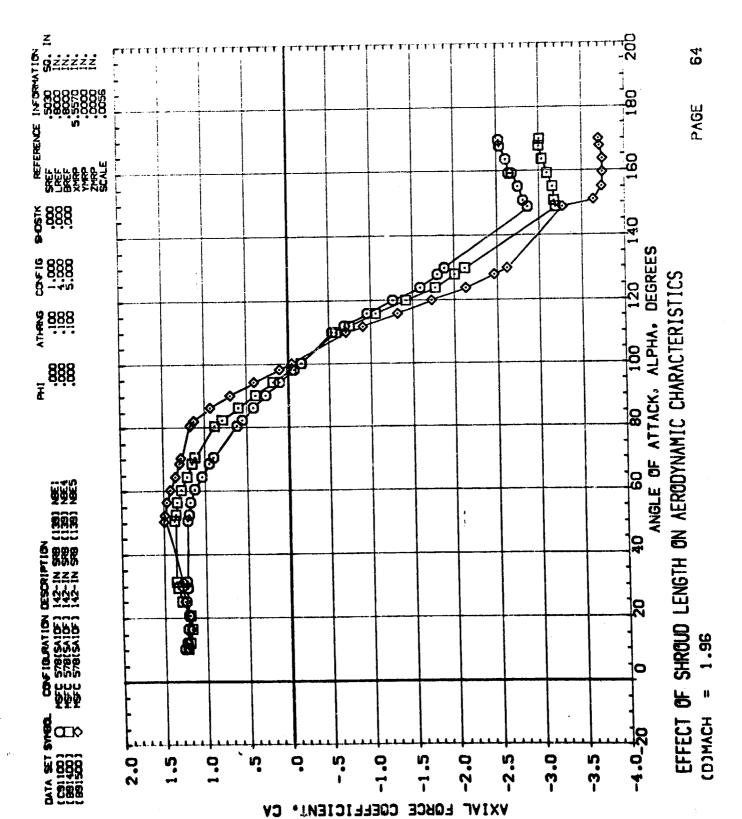




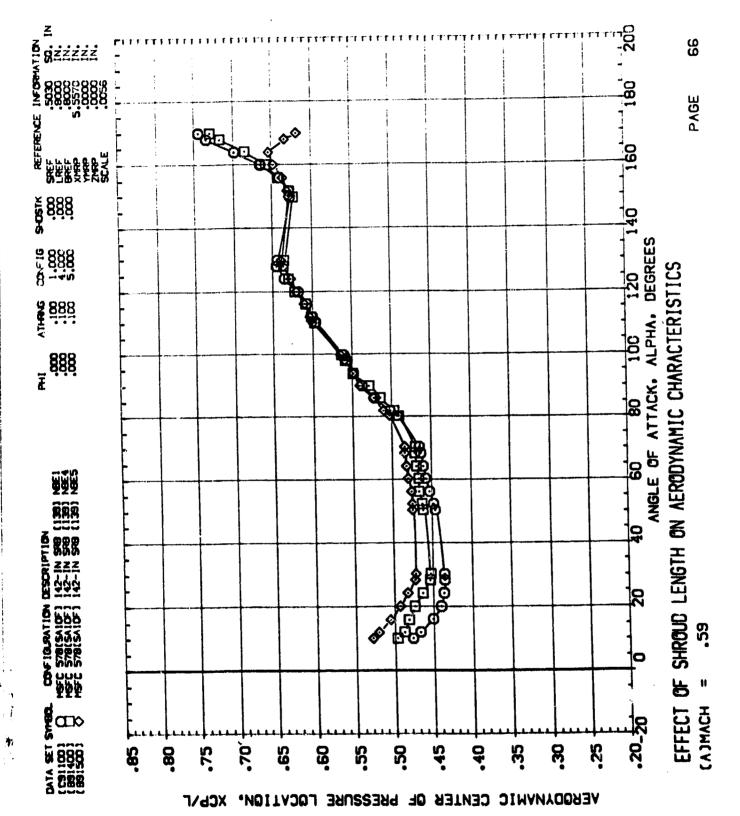




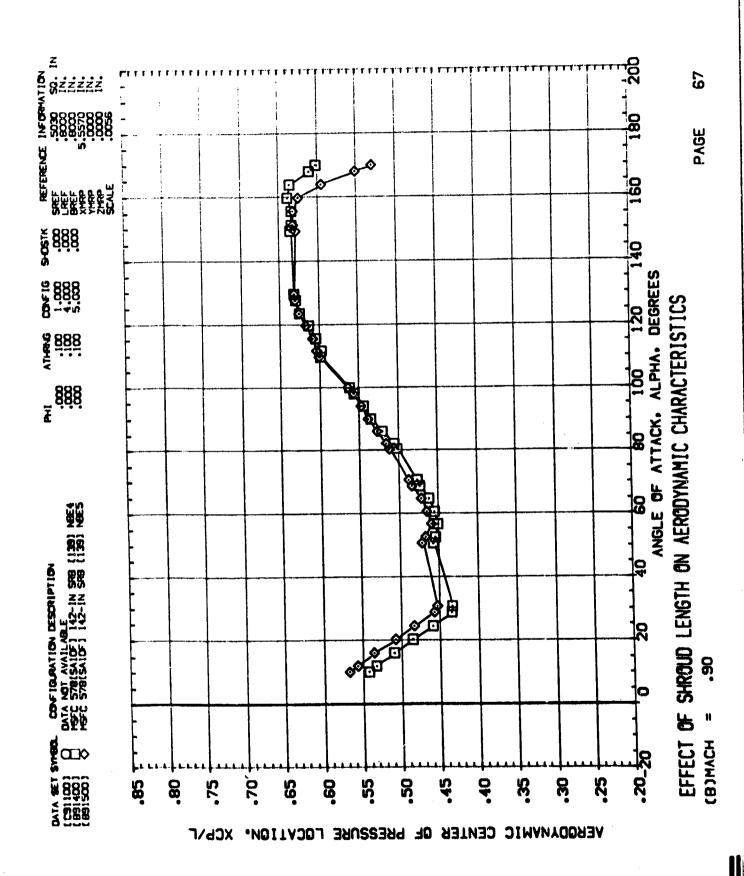


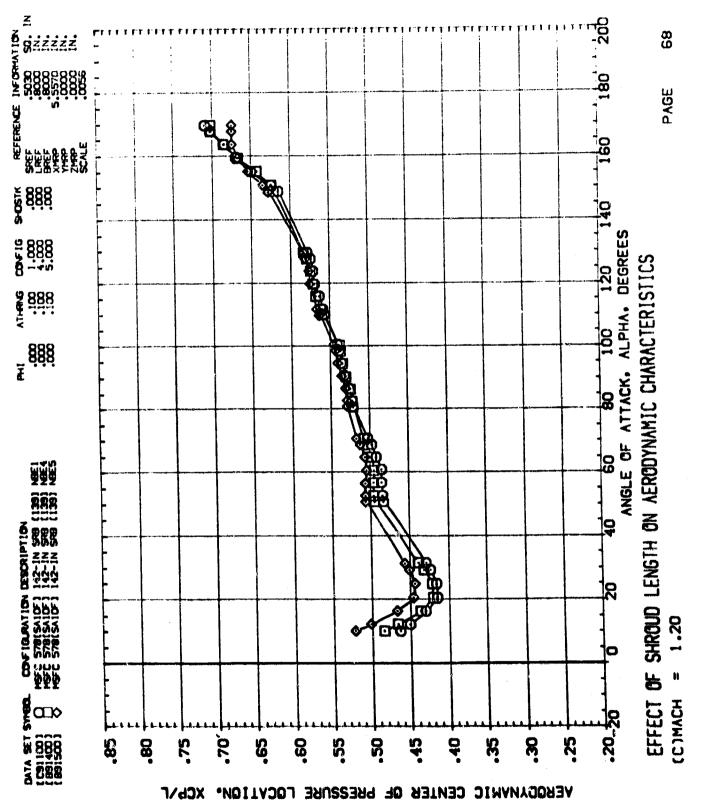




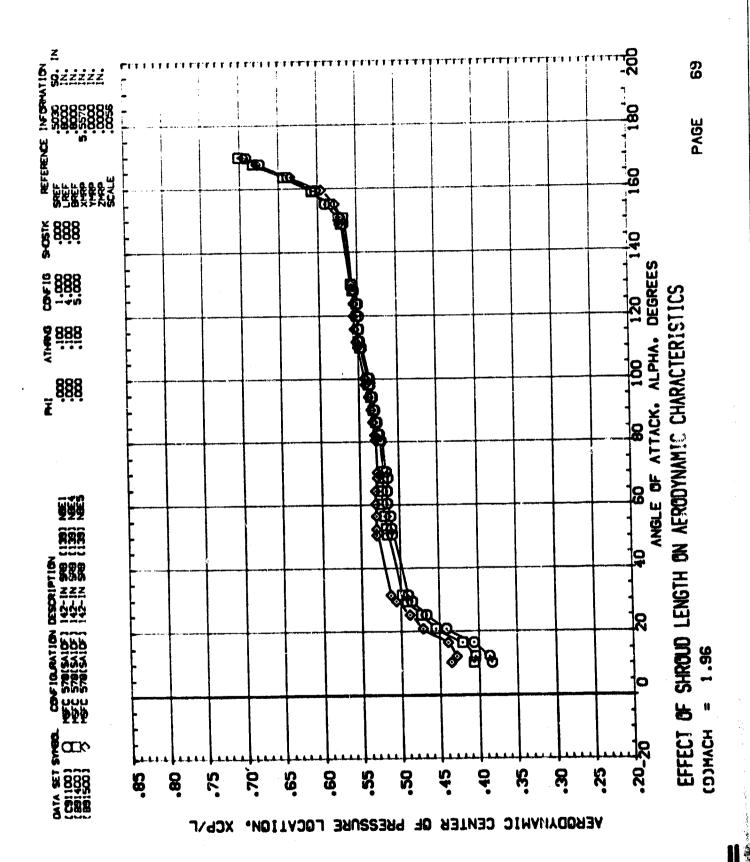


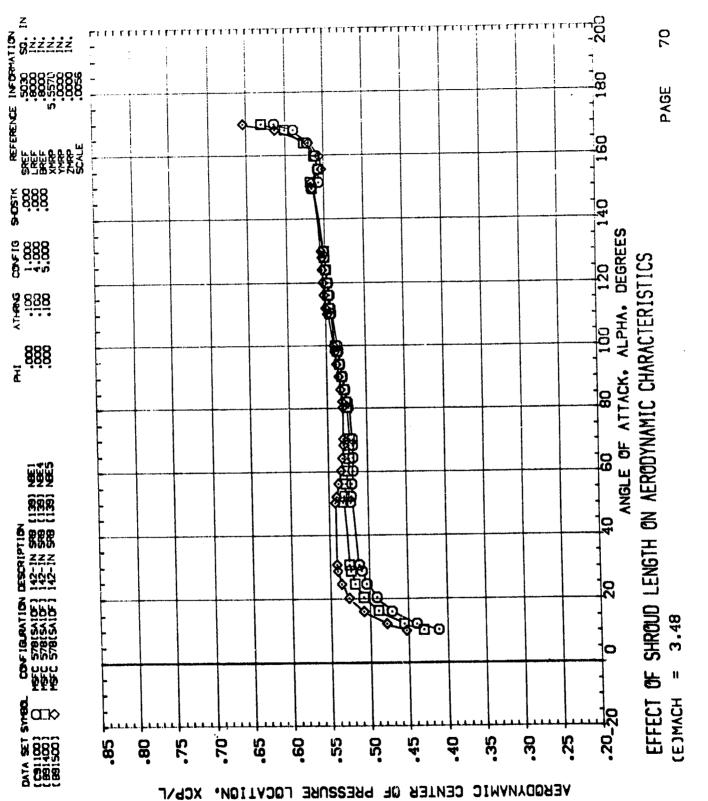




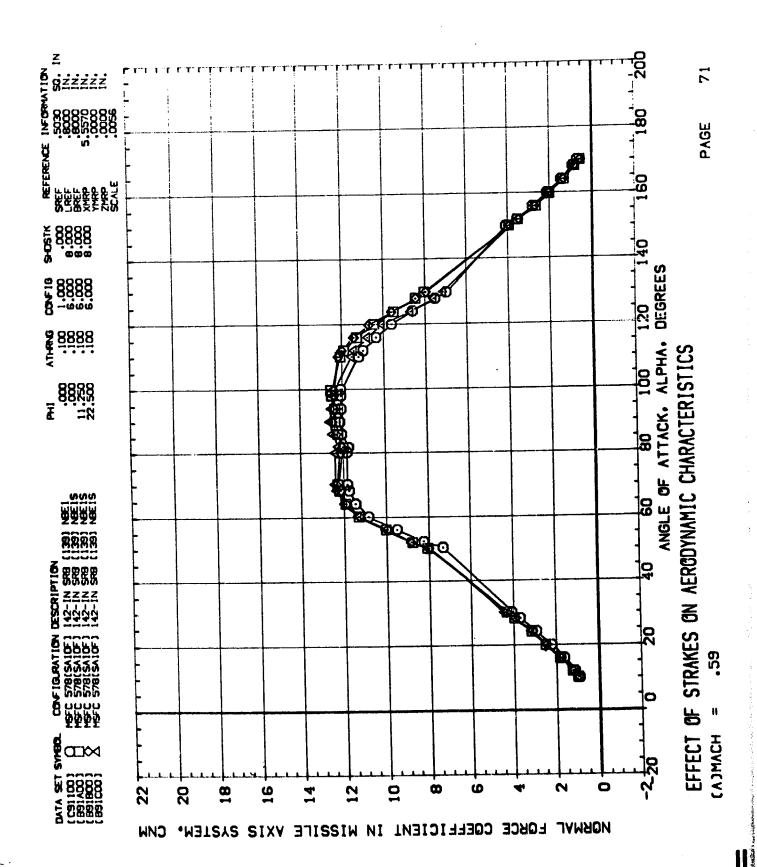


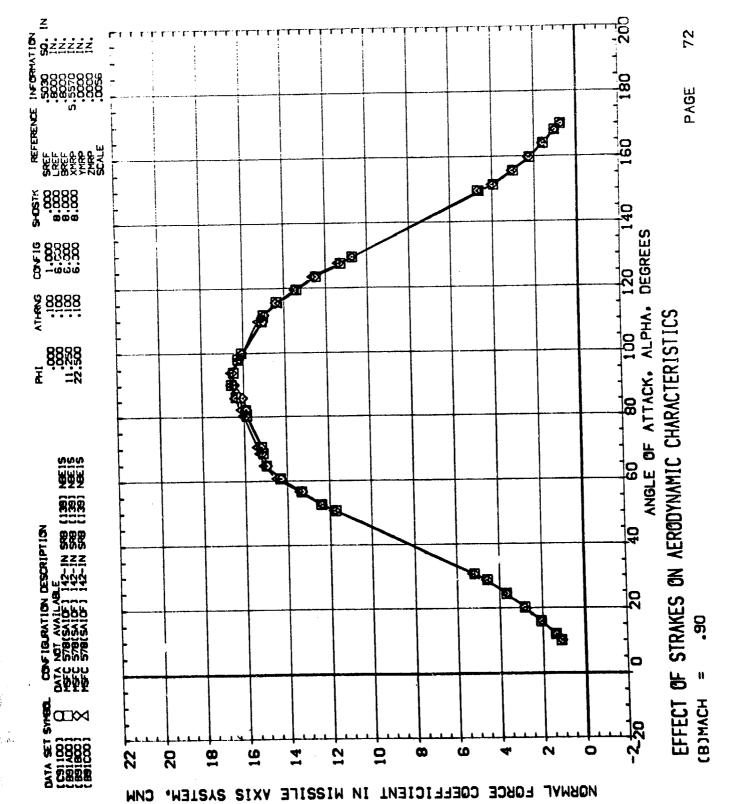




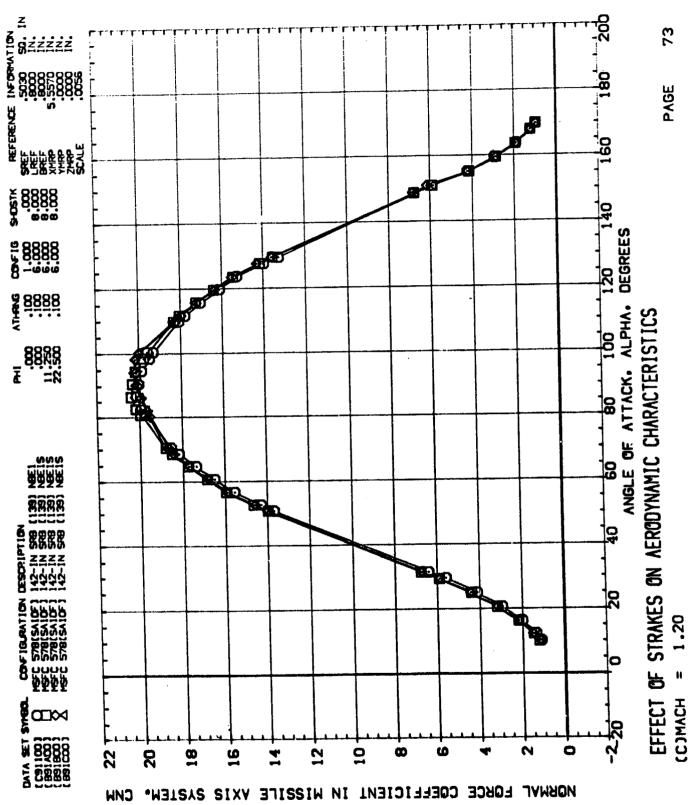


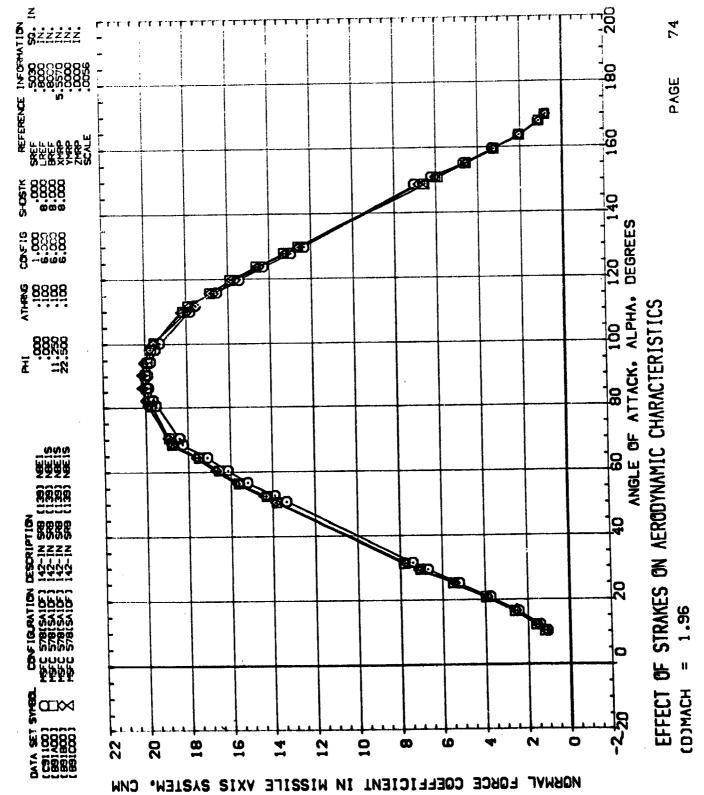






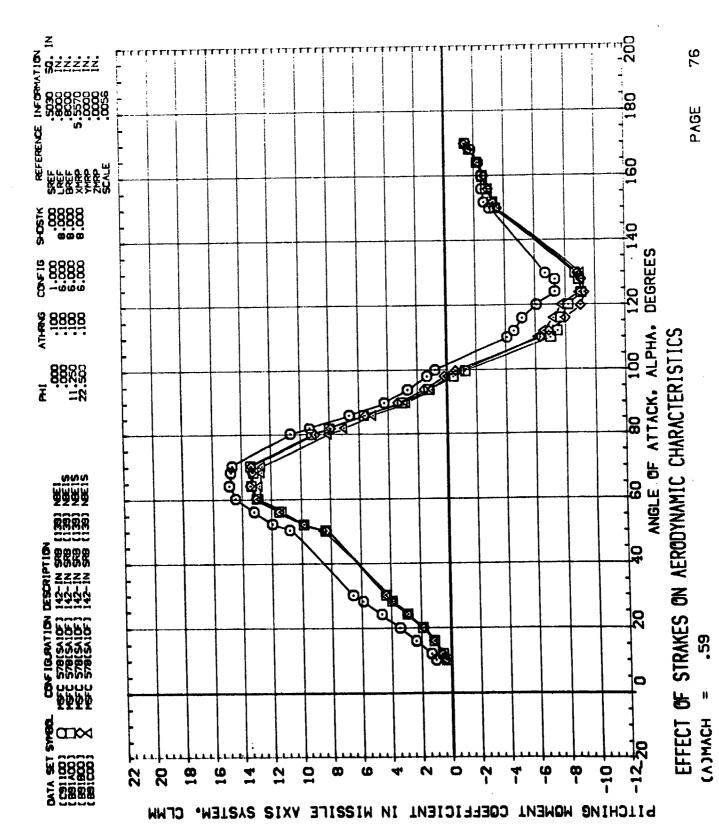




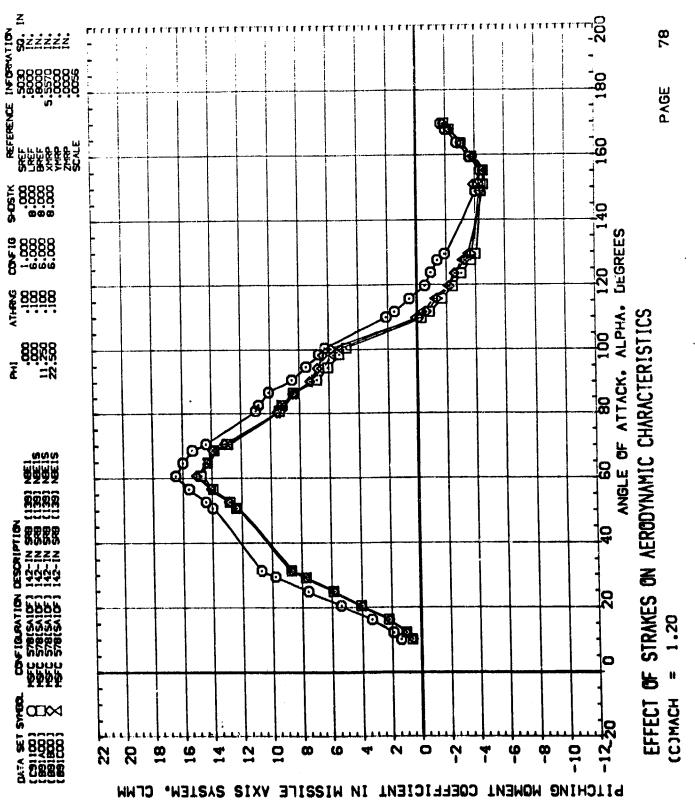


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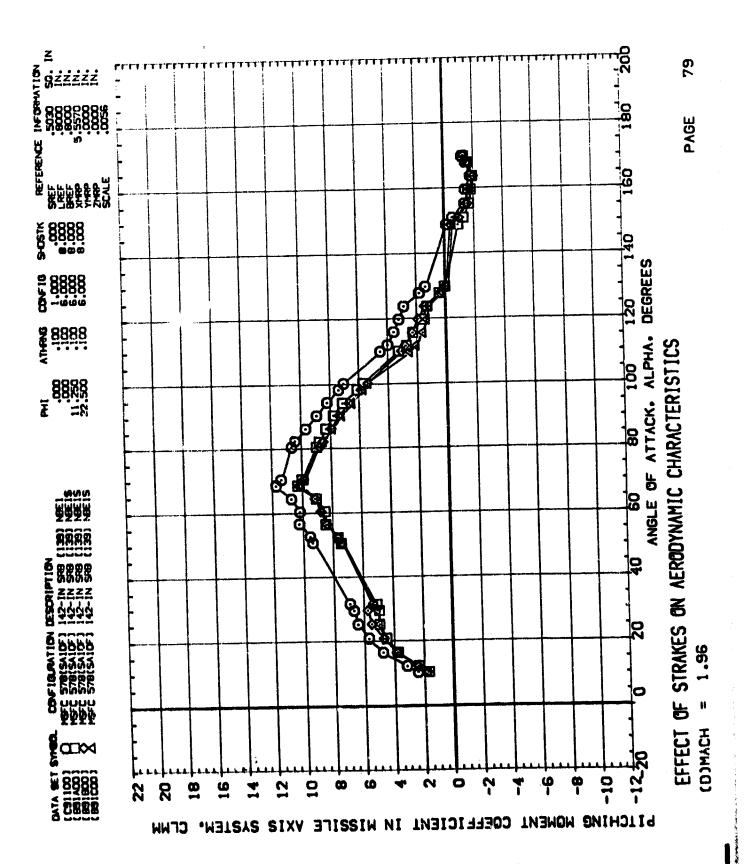


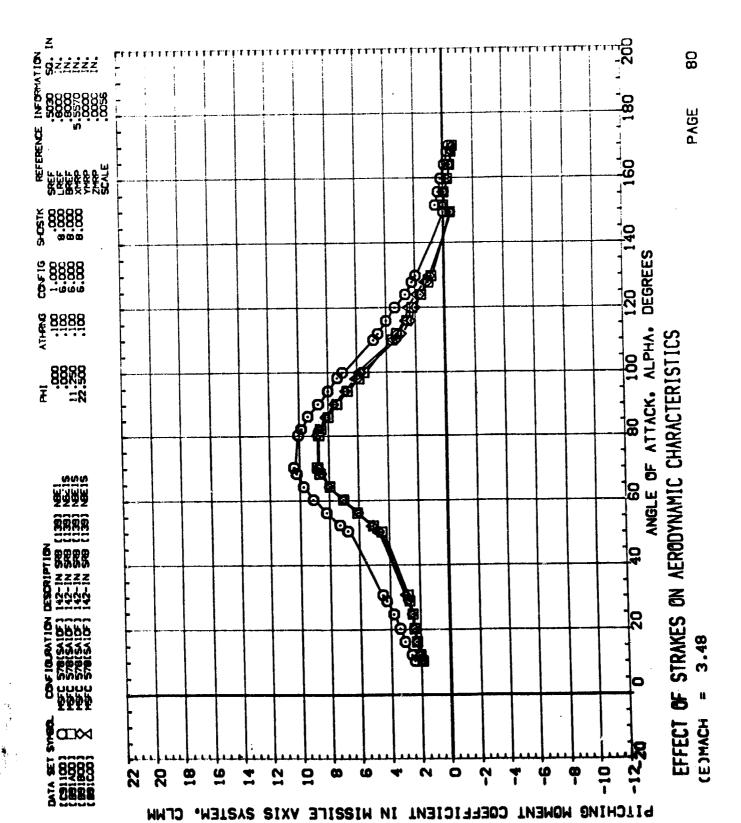




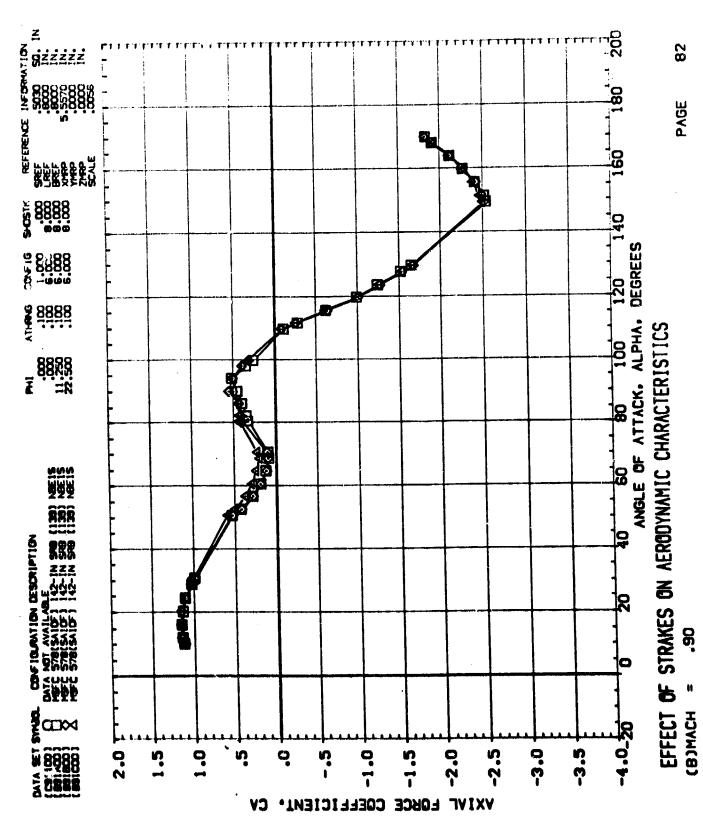






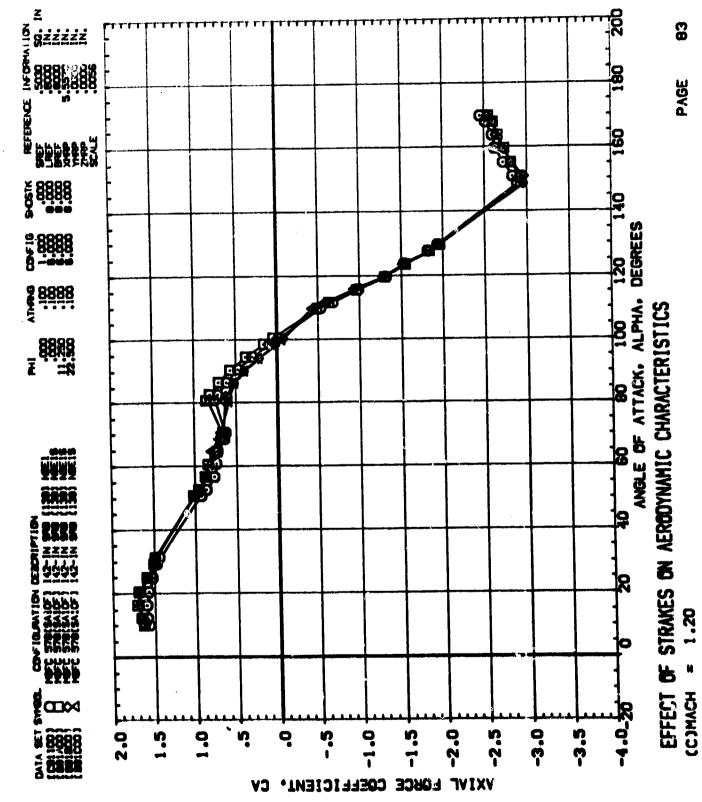


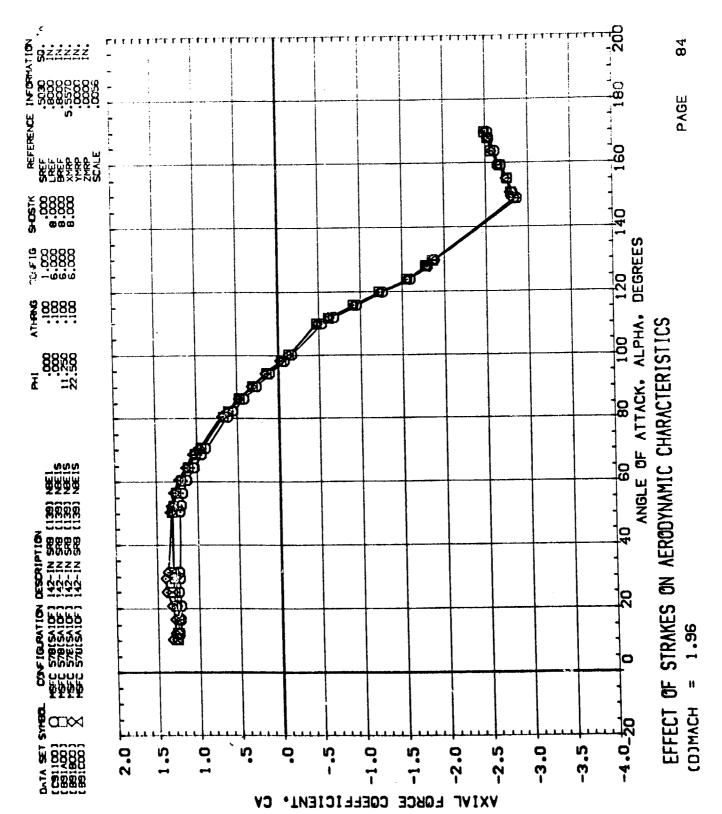




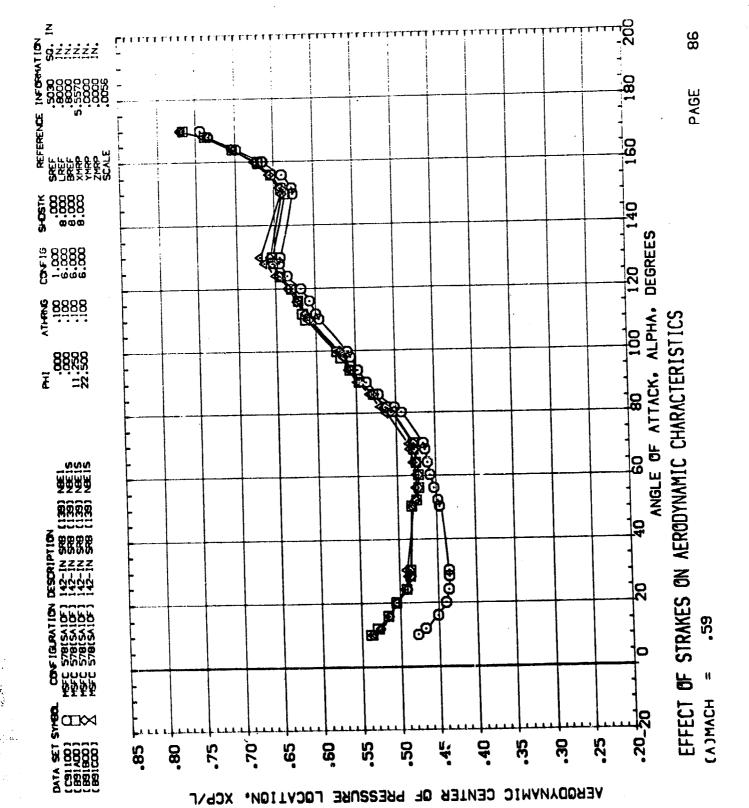
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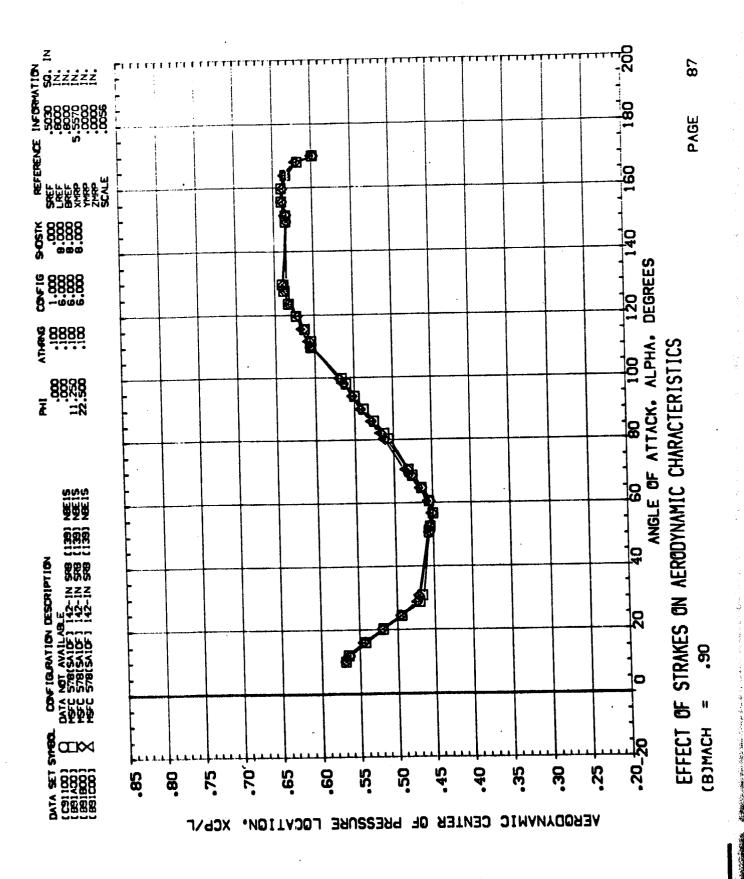


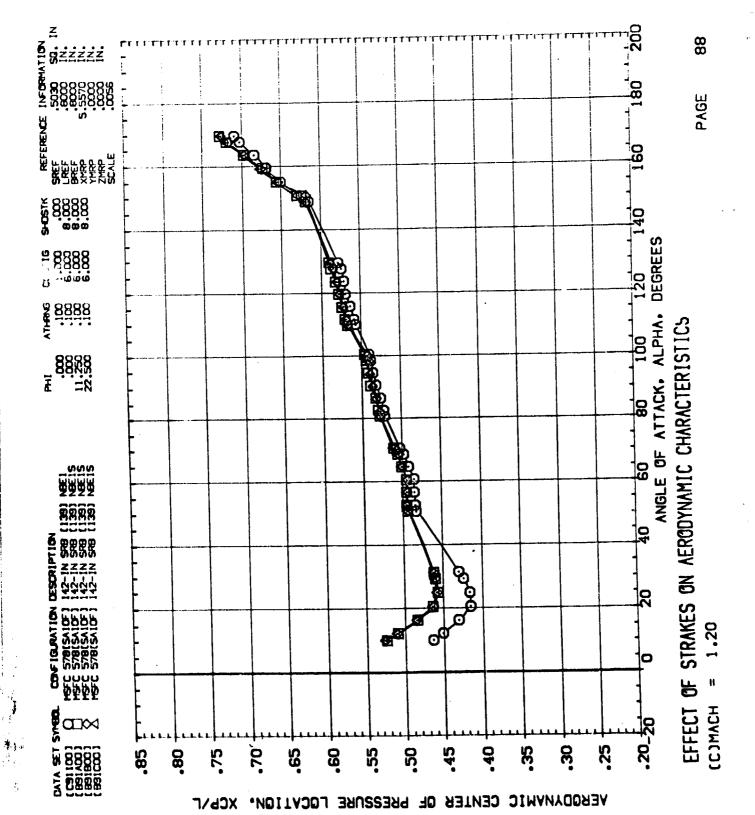














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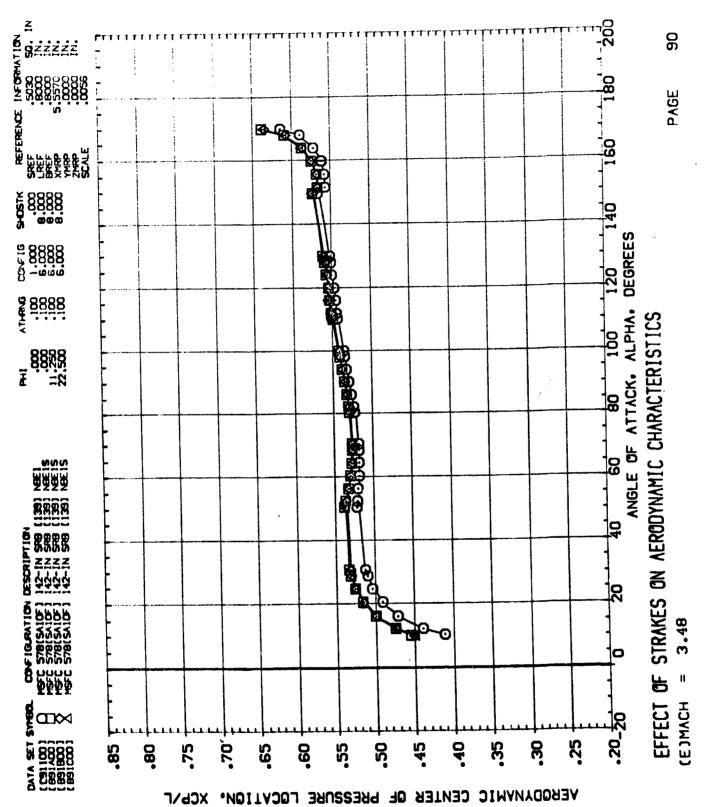
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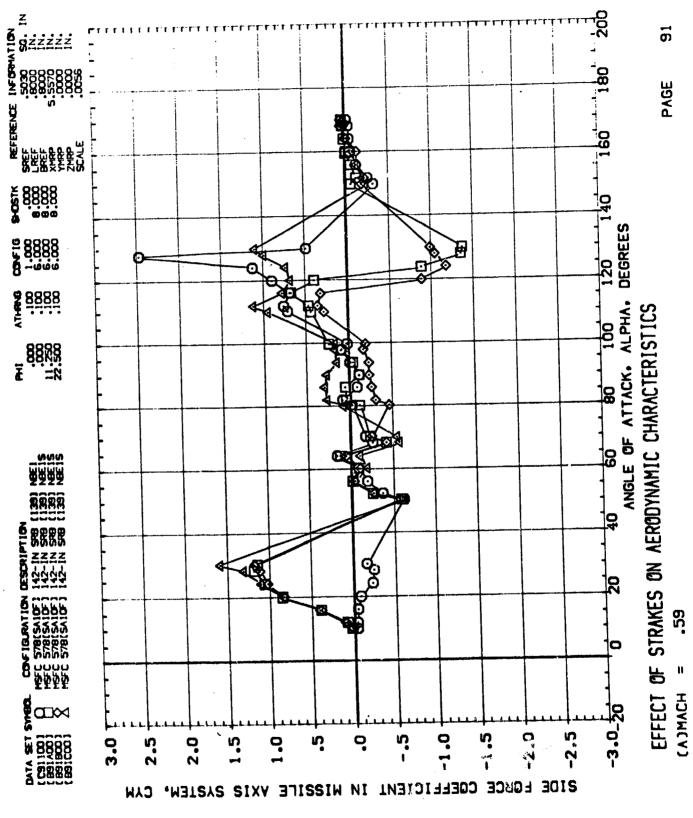
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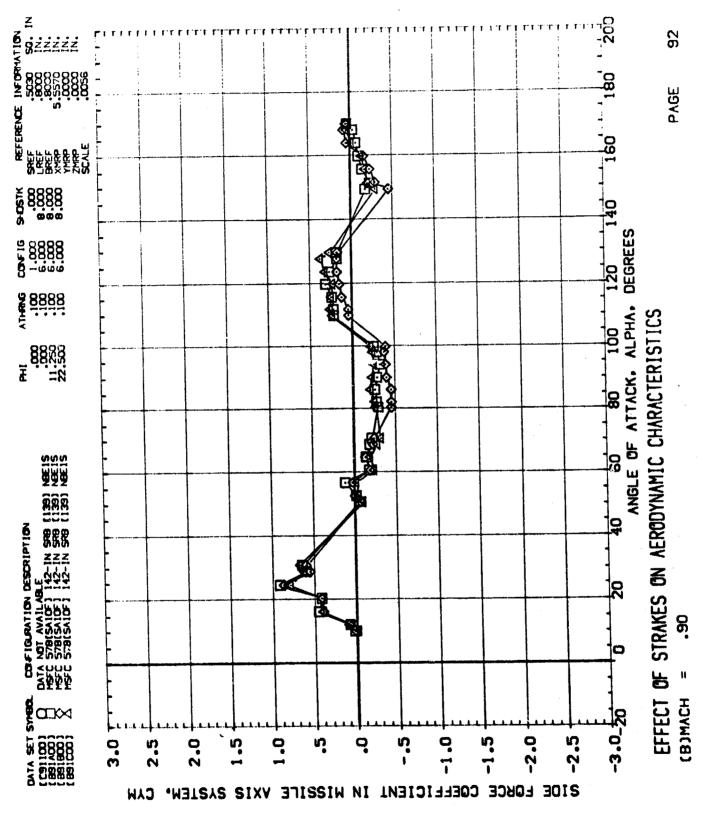
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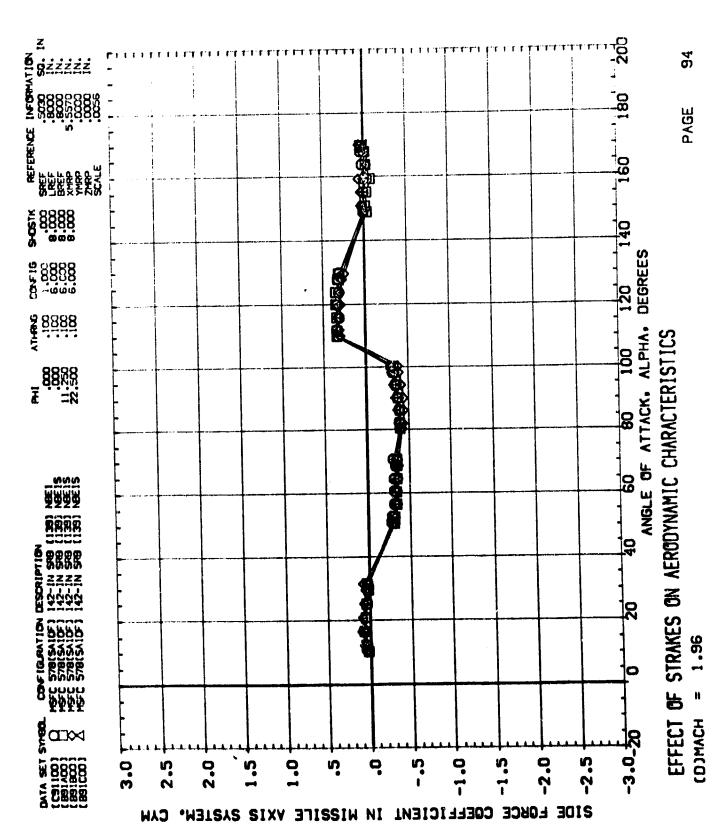


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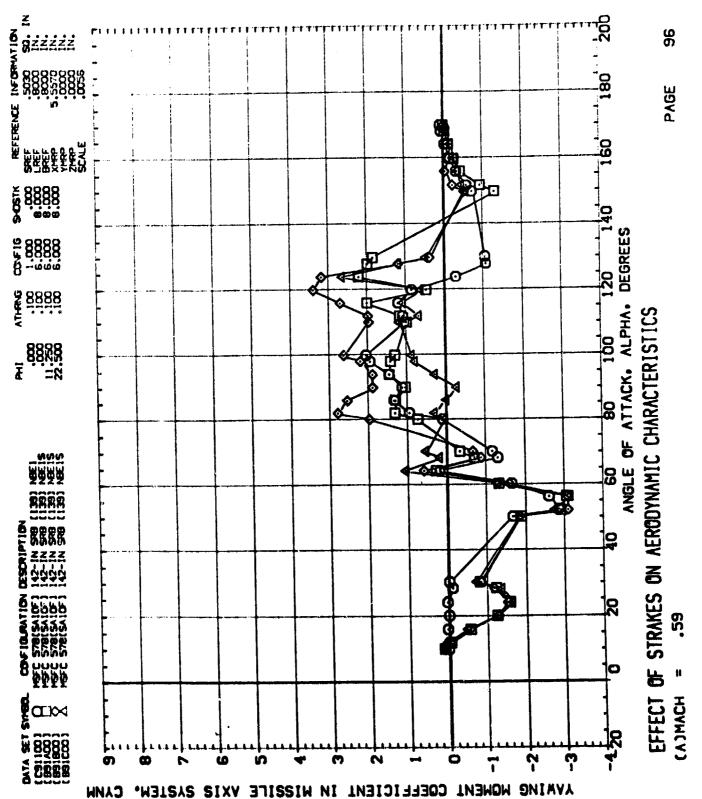
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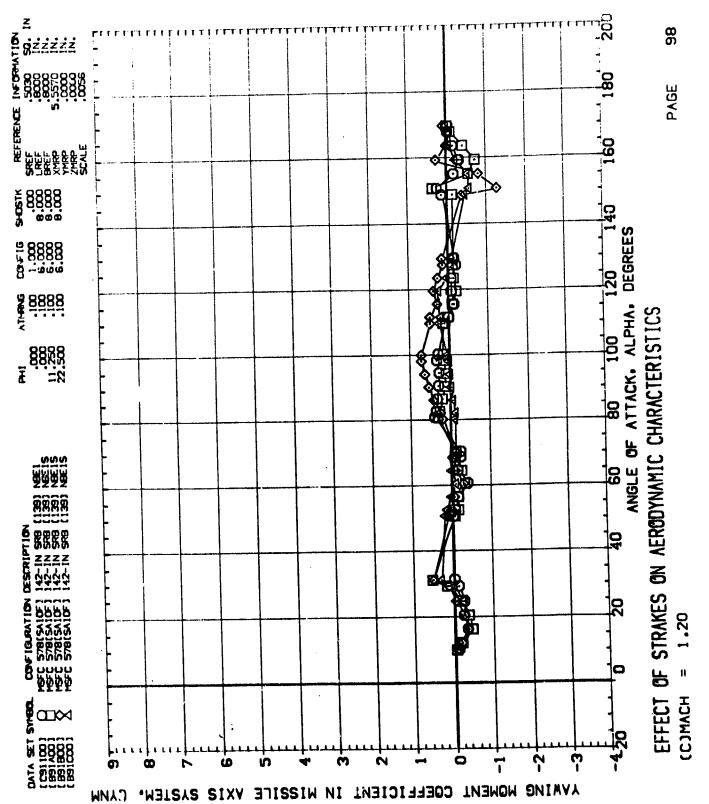


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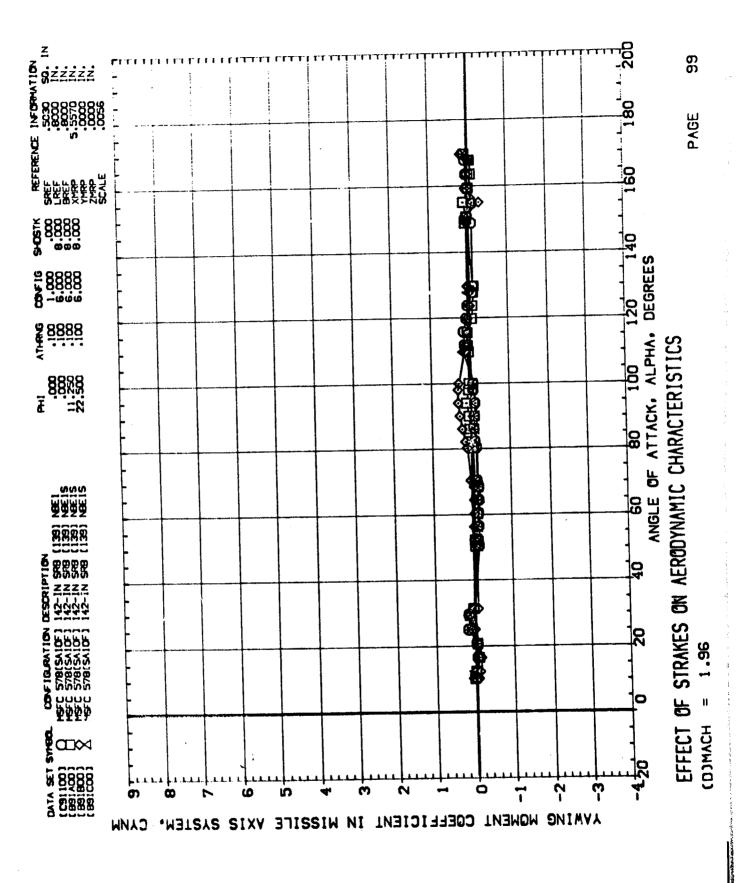
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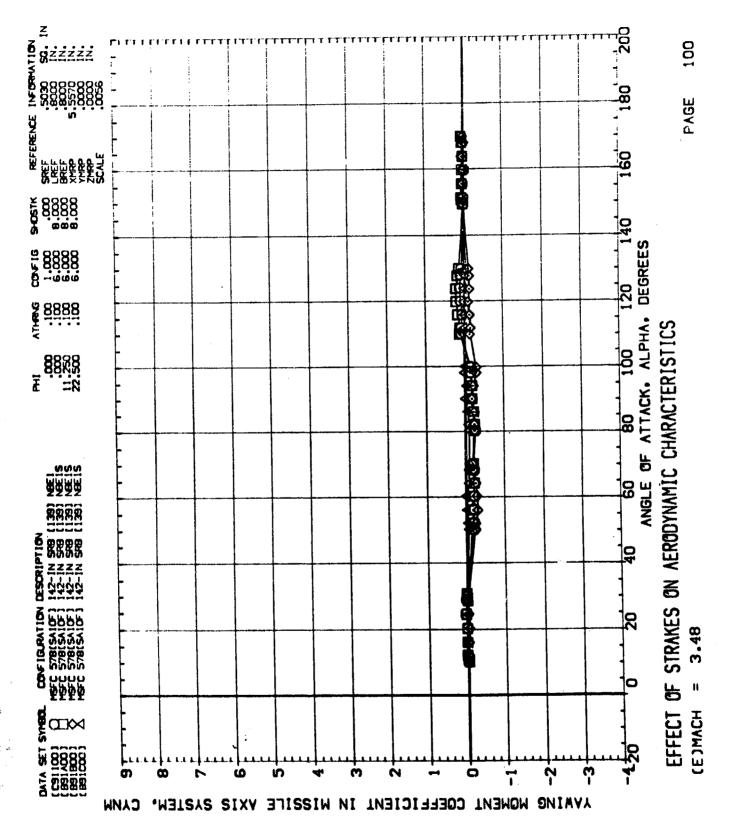




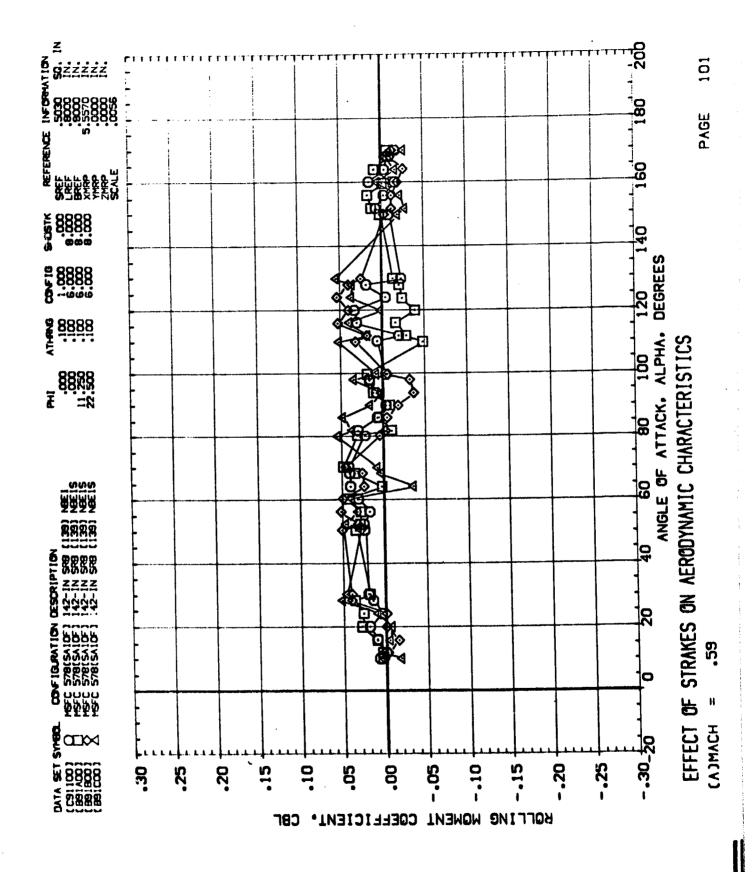


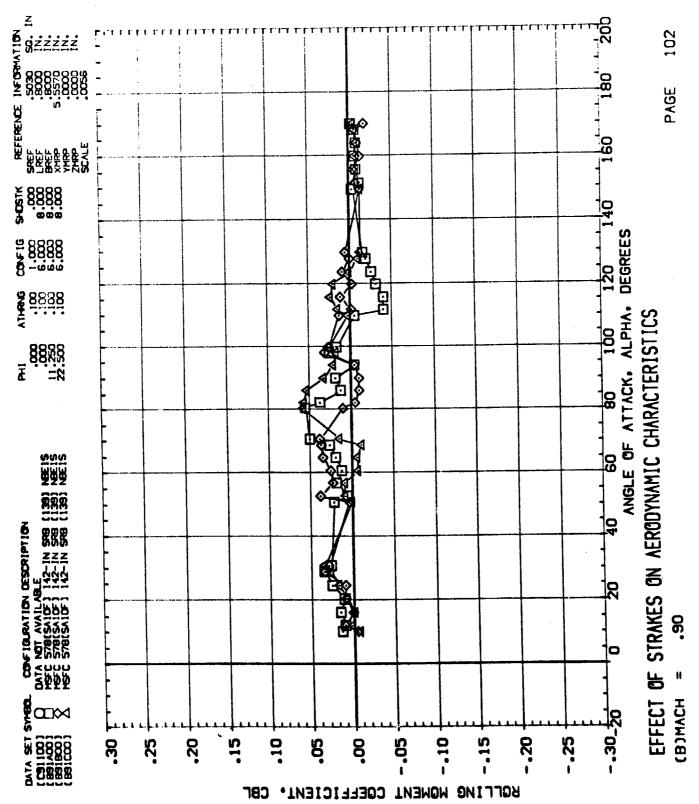




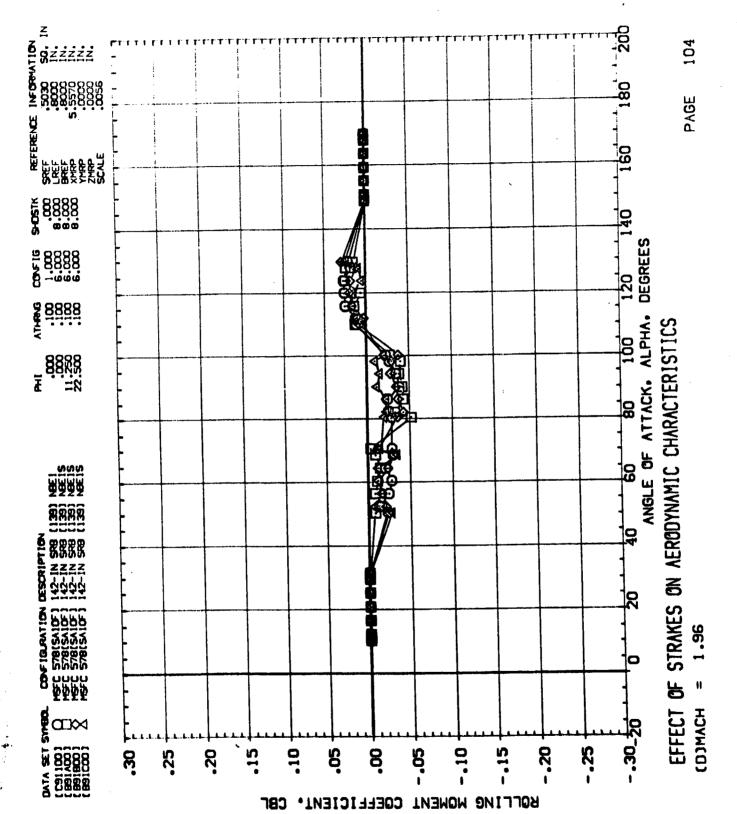




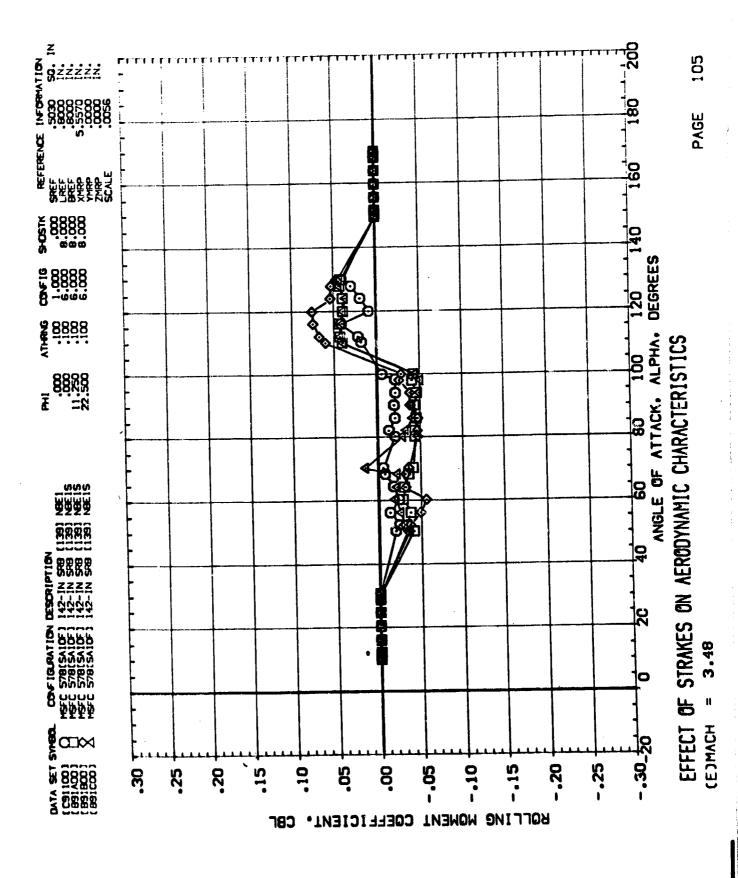










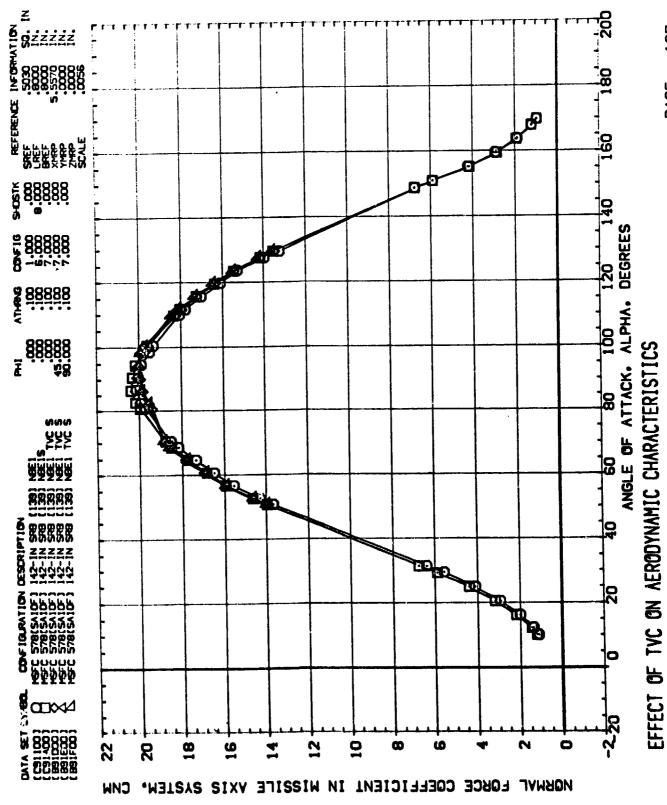


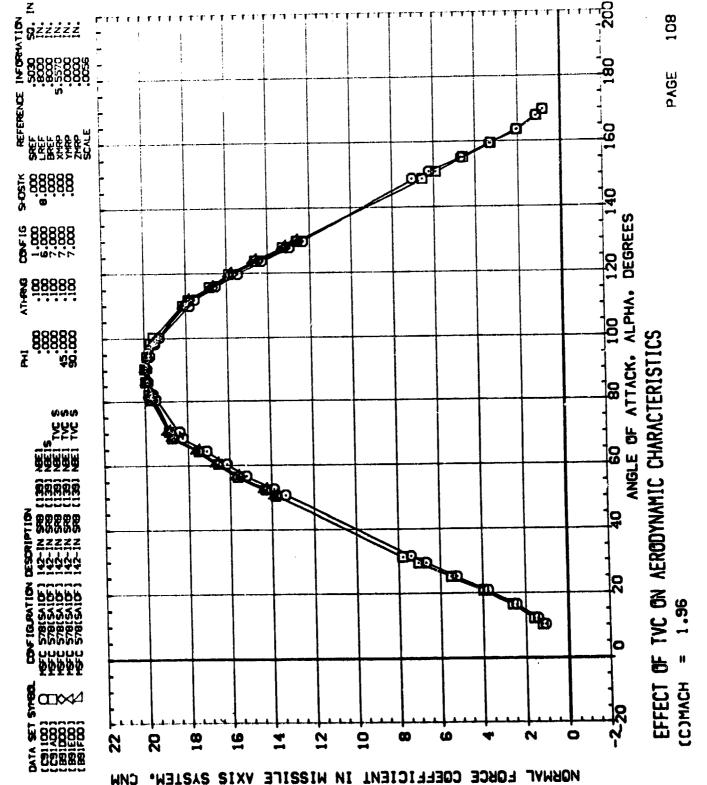


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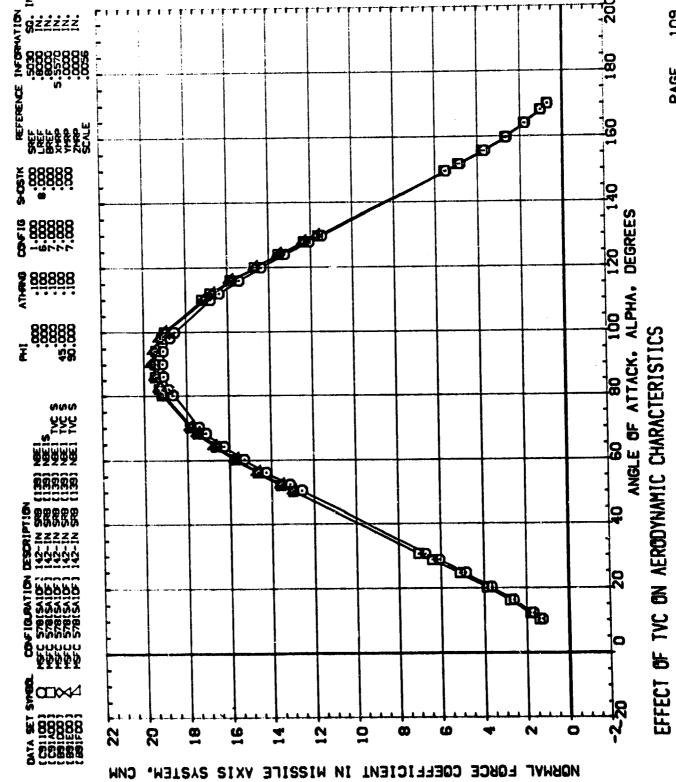
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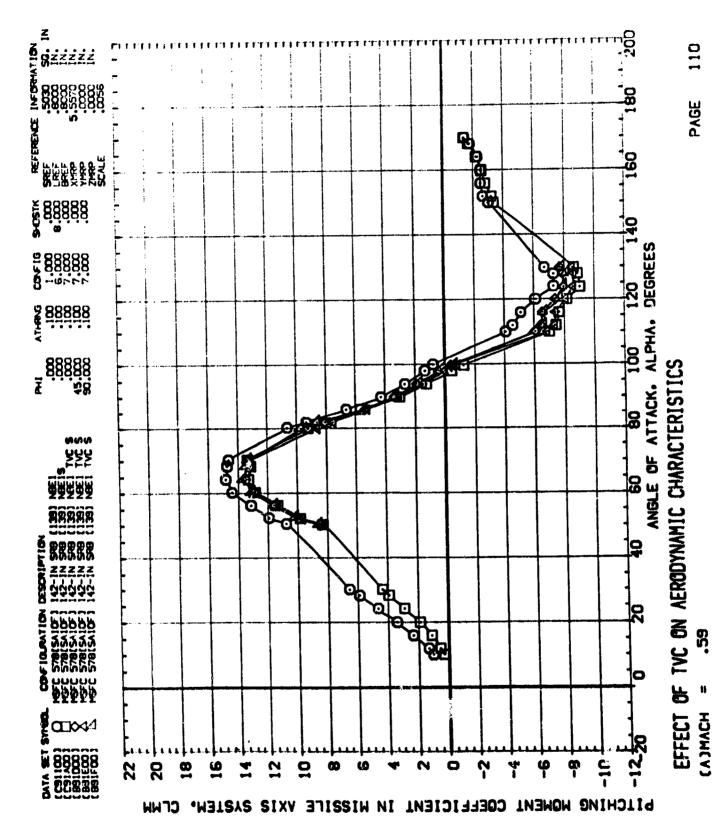




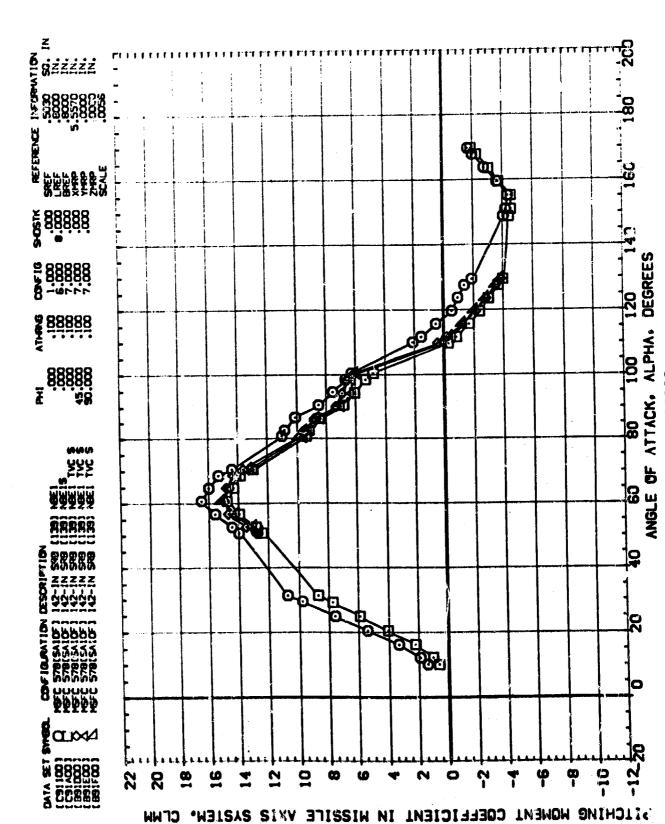




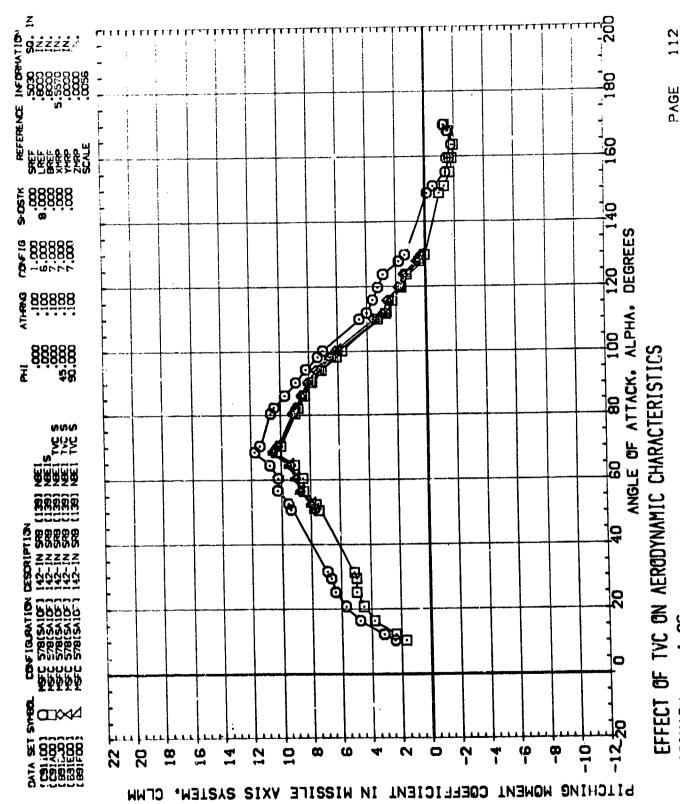
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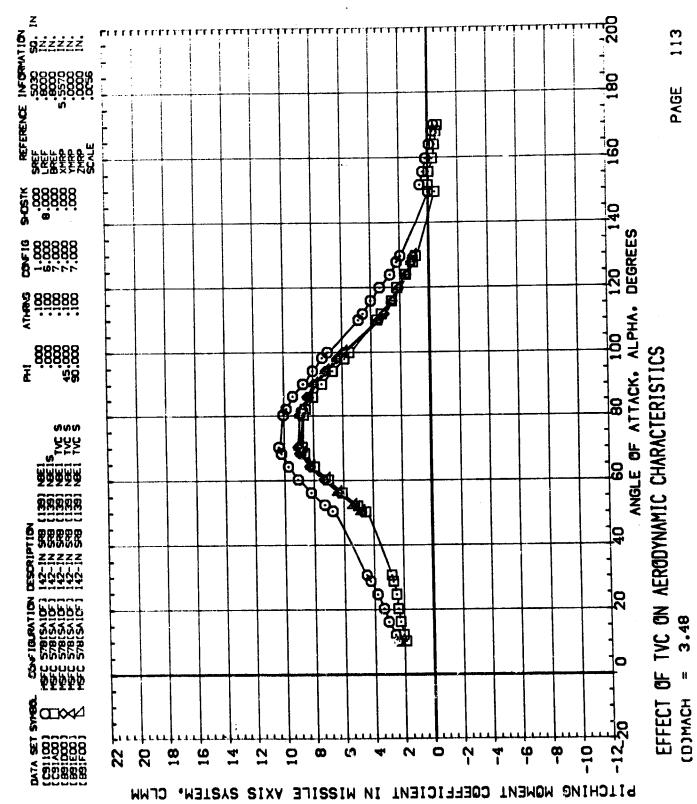


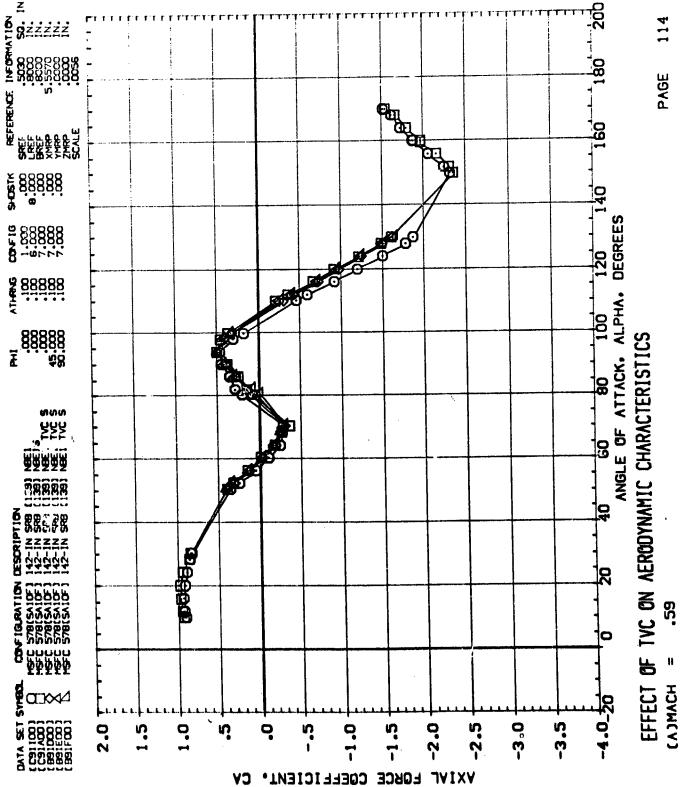
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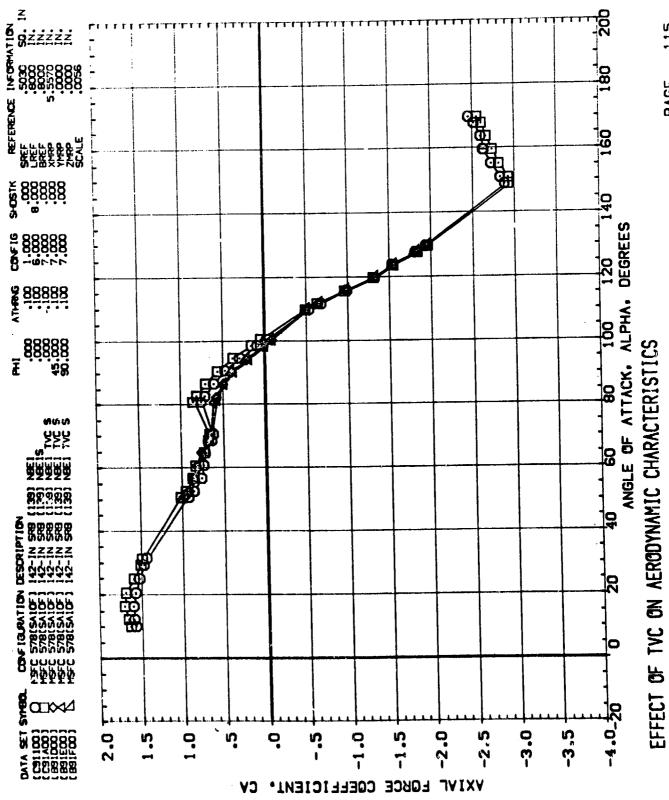
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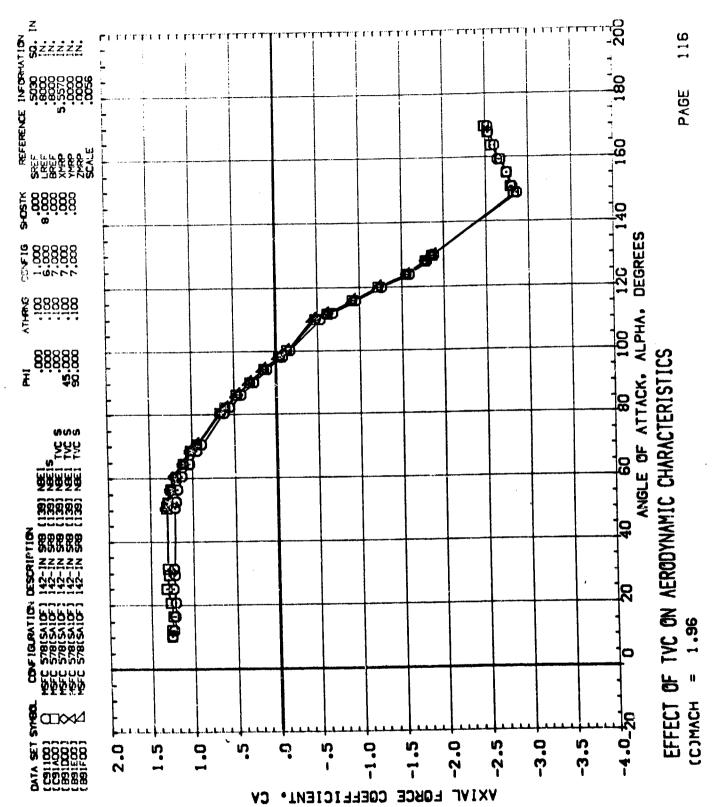




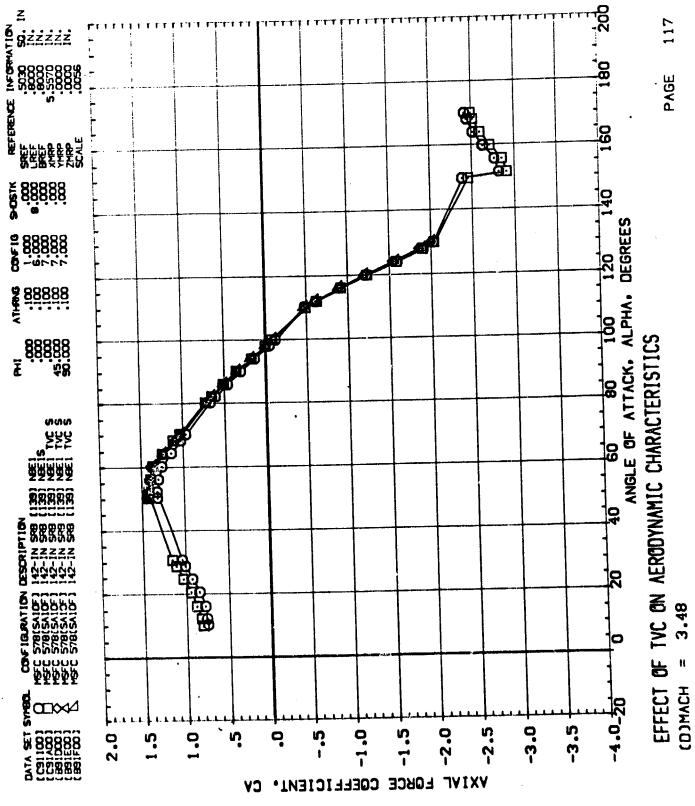


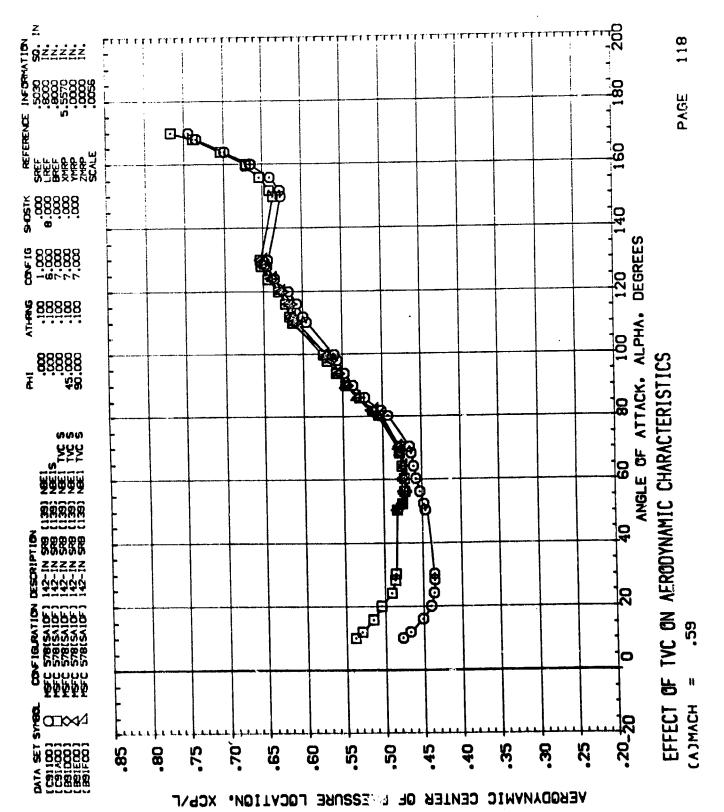
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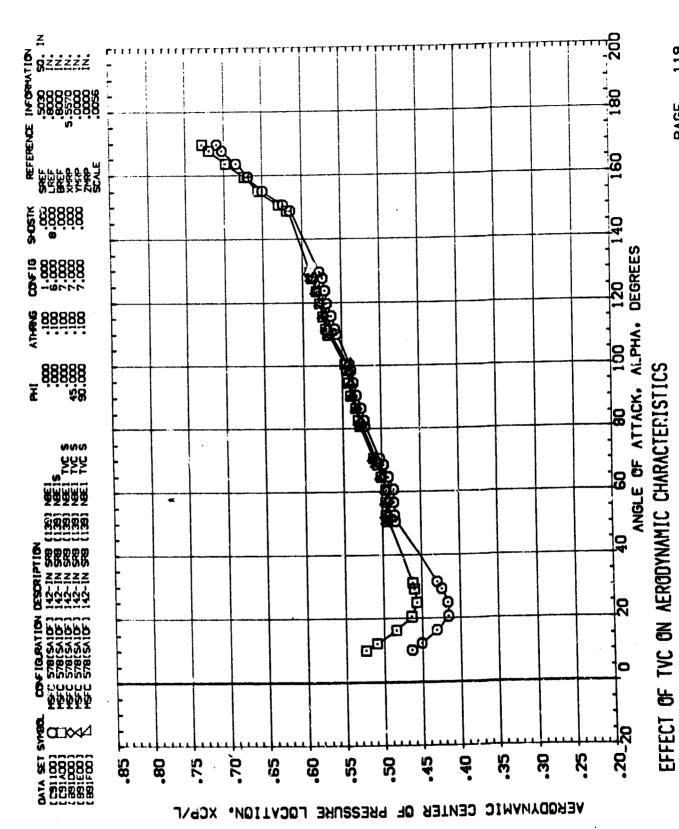


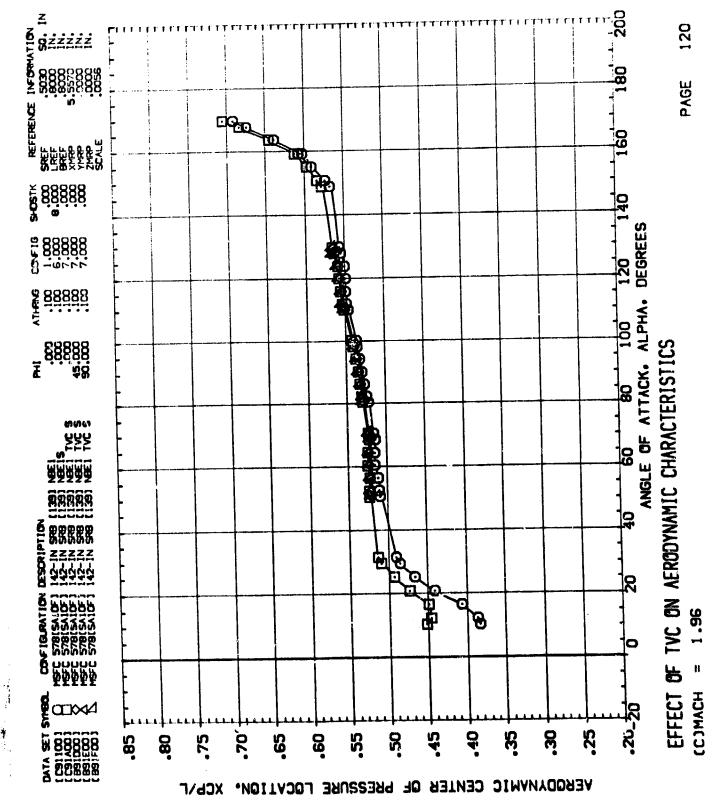




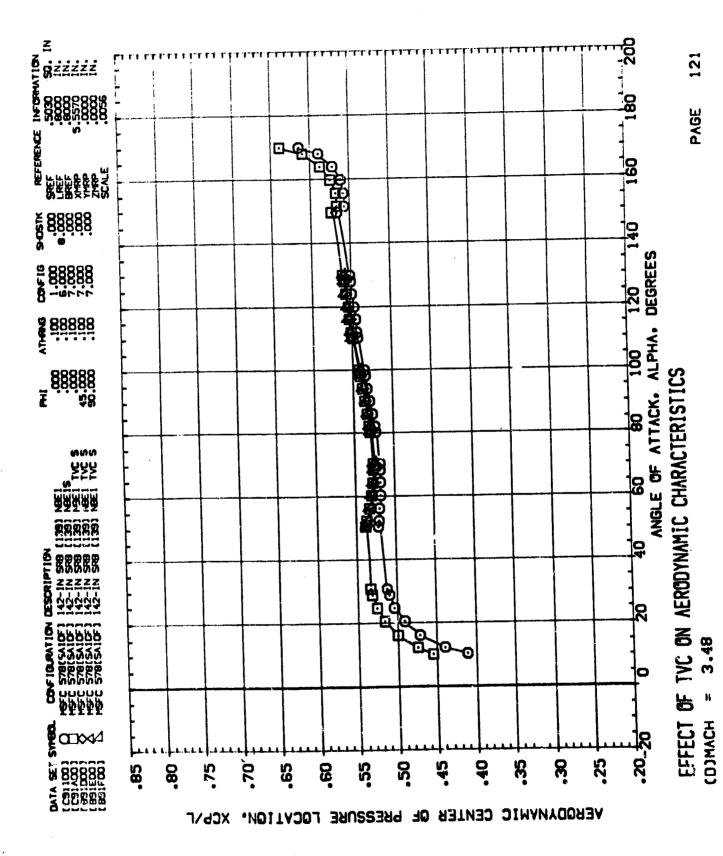


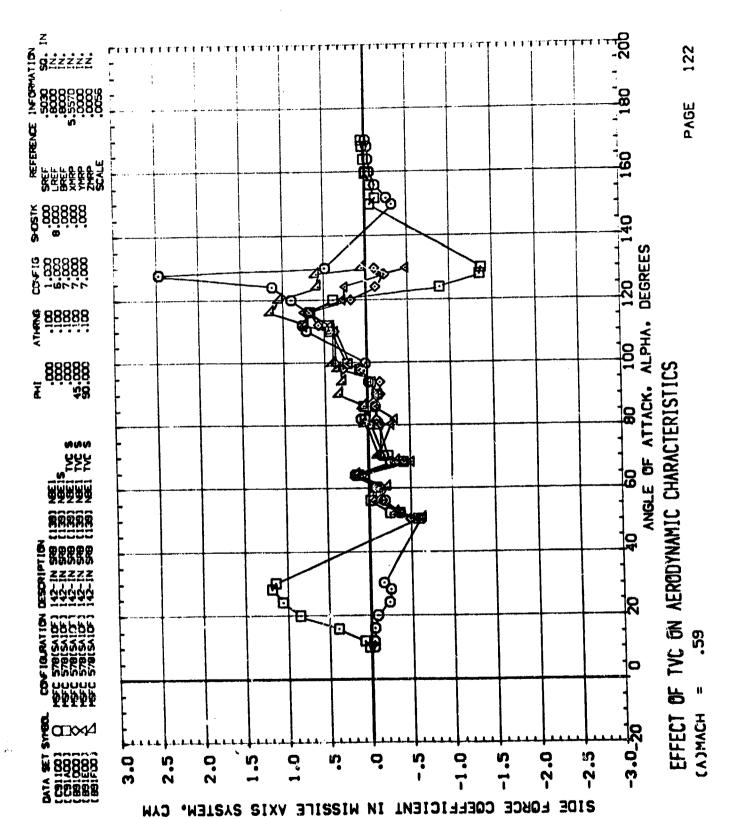
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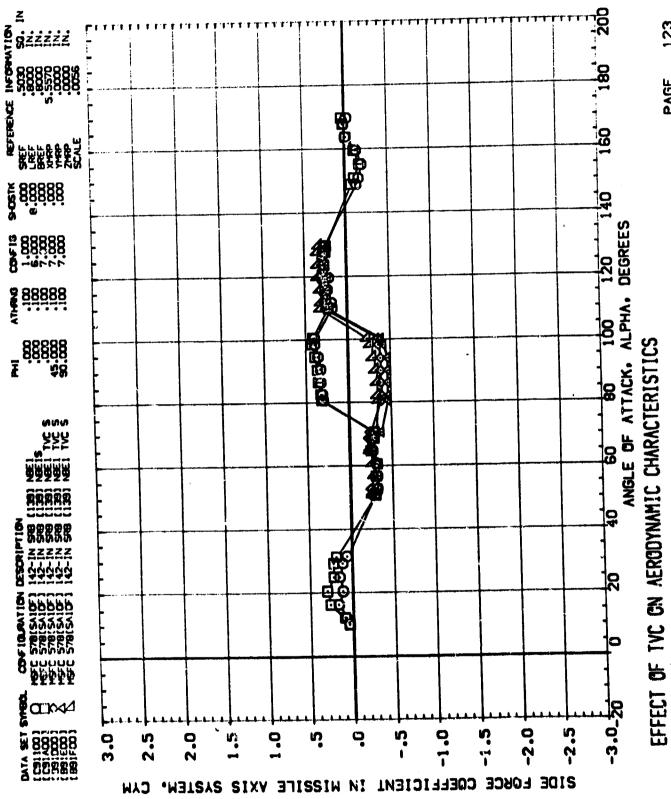


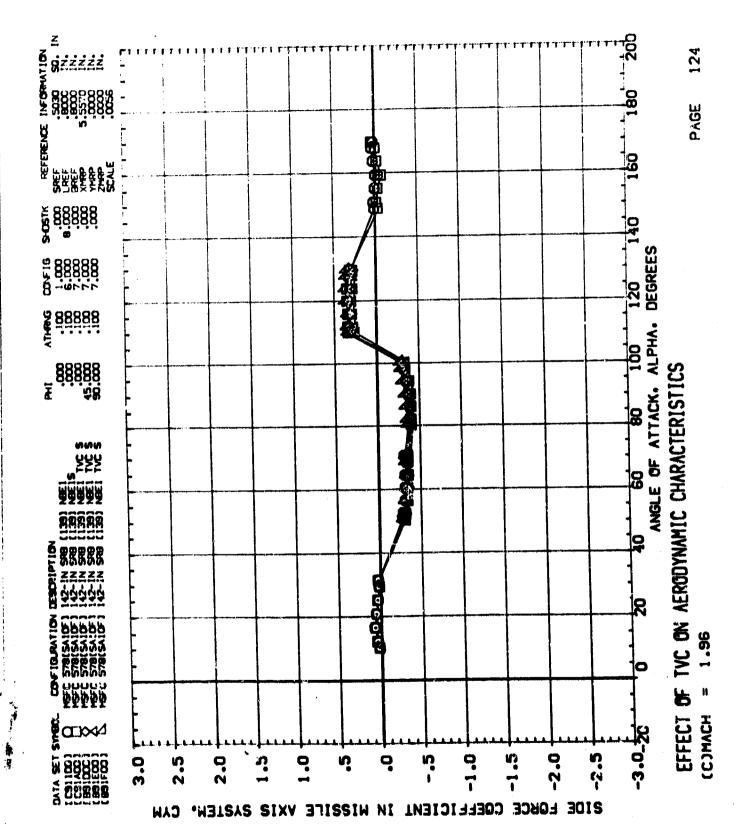






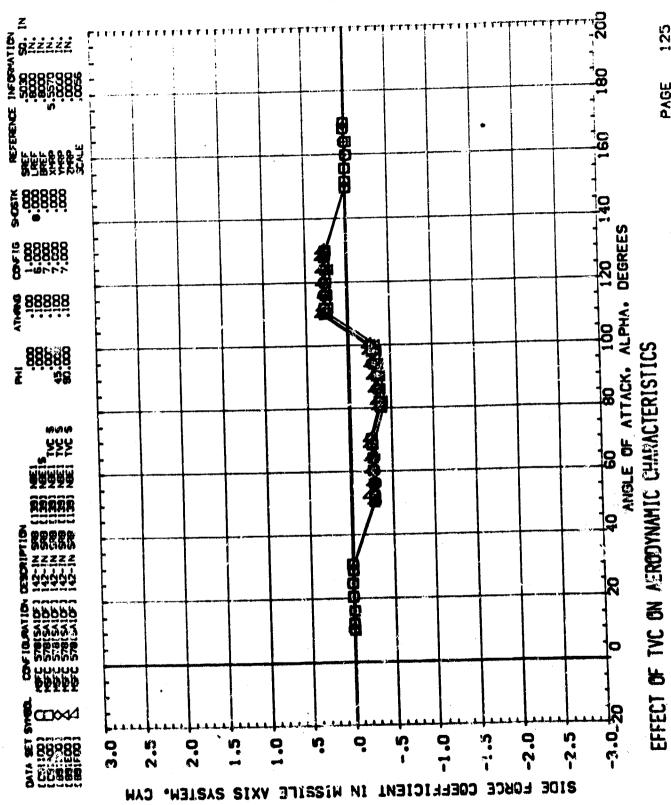
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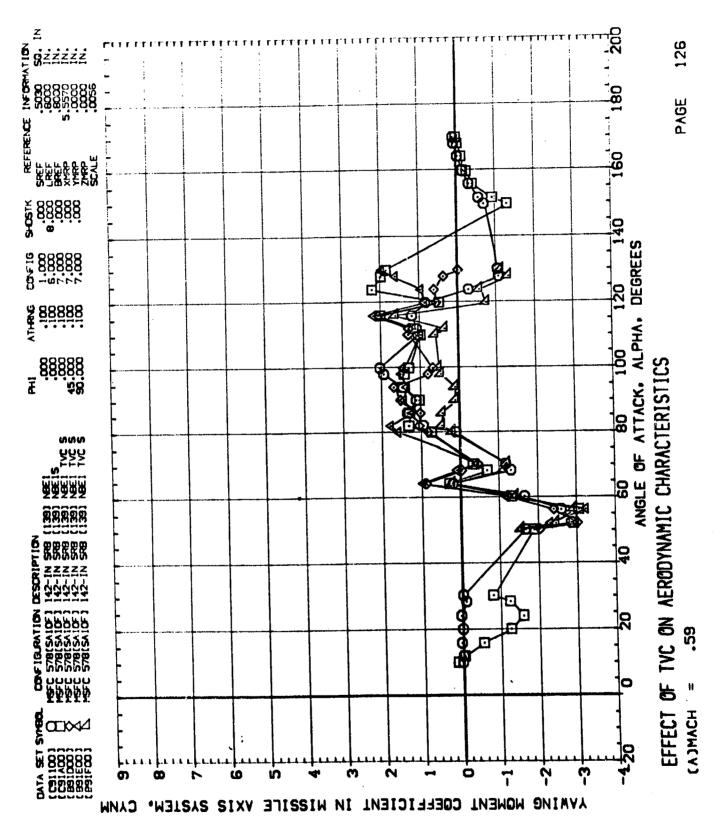




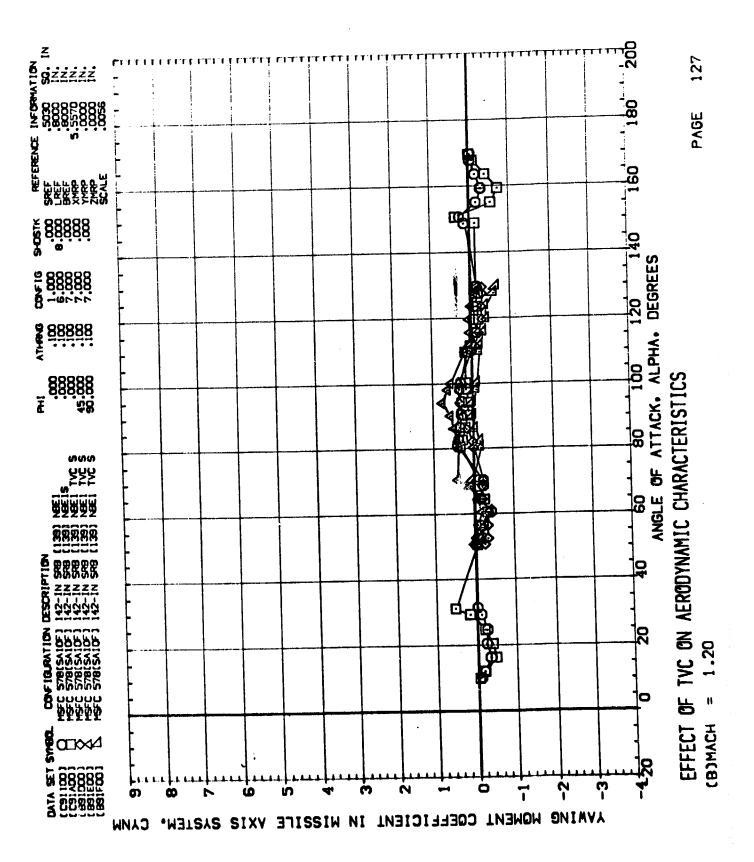
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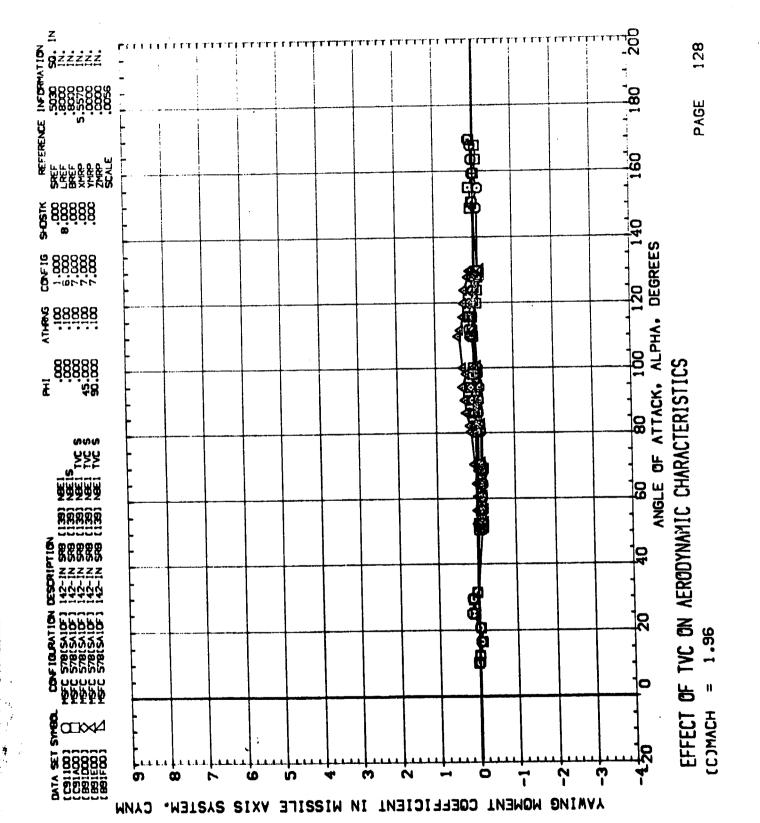


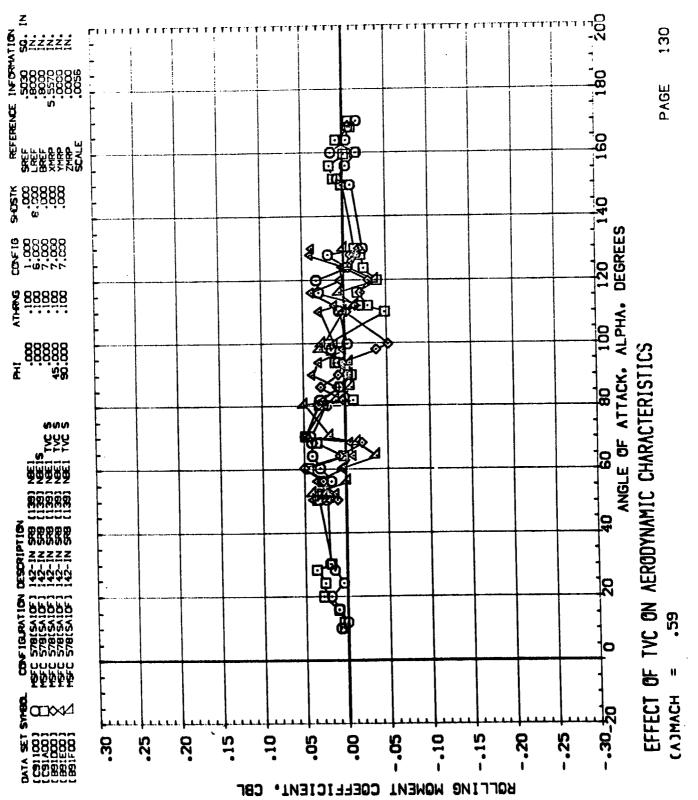
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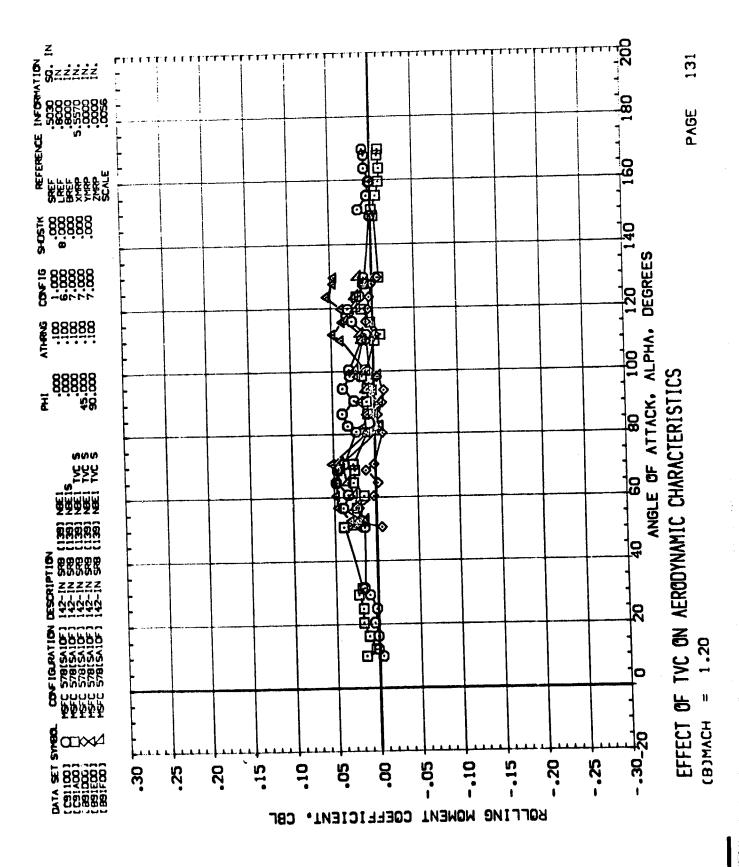


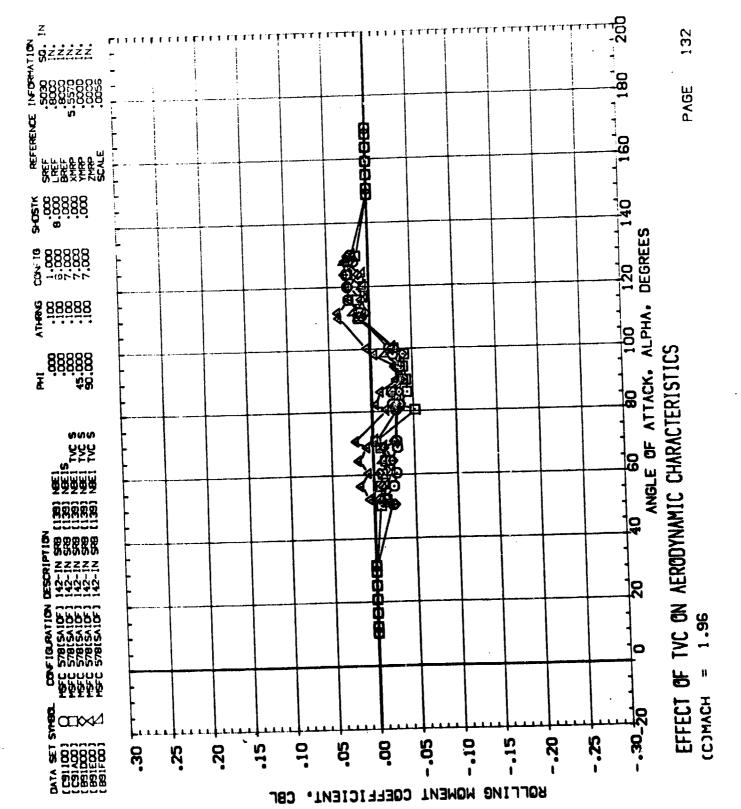
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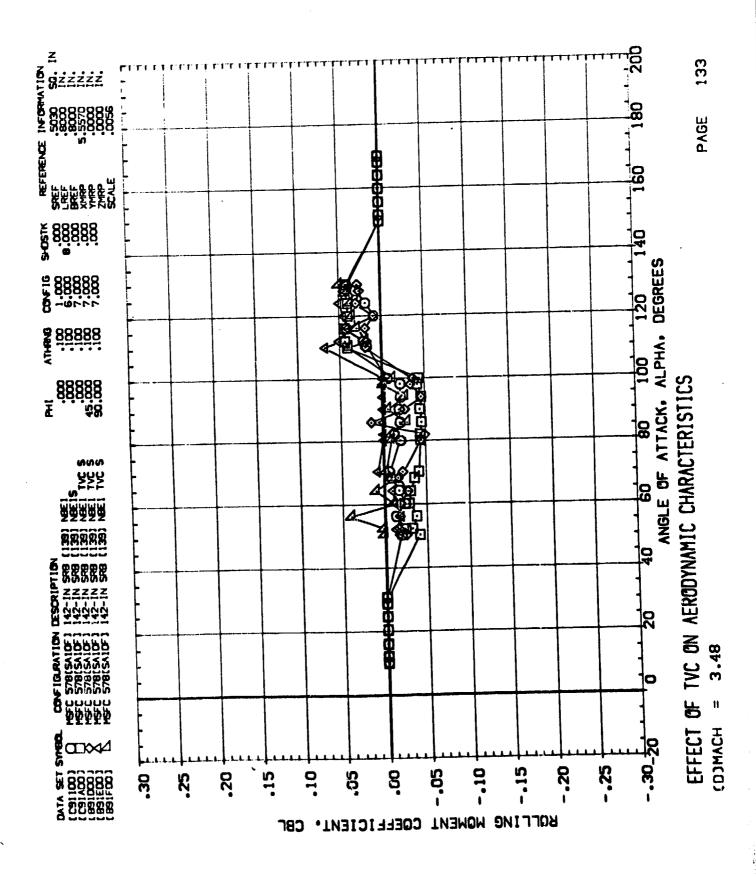












### APPENDIX

TABULATED SOURCE DATA

Tabulations of plotted data are available on request from  $D\epsilon$  ta Management Services.

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14T 578	MSFC STRESALSF) 142-IN SKB (139) NBEL						GRACIENT INTERVAL =	5	1,27169	1.23960	1,22250	1,21459	1.23940	1.22169	1,23129	1.18995	55125	GRADIENT INTERVAL =	ð	.75649	.76835	.78695	.65135	.92960	1.05579	1,54280	.85265	. 51439	RADIENT INT	5	.64516	.66039	.71410	79470	. 89769	.97319	1,91549	.79683	1111111
DATA, NSFC	142-IN SE						6.96 CR	3	2.41569	3,15725	4.74699	5.72360	6.43699	6.66729	6.93479	5,65470	.25819	7.03 GR	T C	2.39625	2.62330	3,05110	3,37580	3.75639	4.24185	4.47699	3,41149	.09848	6.20	3	1.94050	2,14260	2.43240	2,65880	2.98660	3,59229	3.82769	2.65850	
TABULATED SOURCE DATA, MSFC TUT 578	: 578 (SA15F)		5.5375 IN.	. 9555 IN.	.5555 IN.		G KN/. =	į	1 07560	1.42550	2.42535	5.74230	5,23255	6,71745	7,43969	3,74985	. 35495	D RN/L =	3	1.26150	1.68980	2.61620	3.64795	4.83125	6.15445	6.72739	3.67499	.26636	D RN/L =	3	1.18649	1.60580	2.46580	3,46159	4.62770	5. BUNDO	6.44150	9444	100000
TABUL	*SEC		10		10		RUN NO. 55/ G		ALTA	000000	16.540	20.830	25,169	29.450	51.480	20.825	GRADIENT	RUN NO. 86/ 0	4770		20.1.01	16.220	20.370	24.55	28.729	30.669	29.360	GRADIENT	RUN NO. 267/ 8	***	ALTA A	11.570	15 670	044		016.62	20.00		37765
		erefulf Bata	AC CA. IN XMEP		ž	:	RUN	•	HACH.	1.55.	766.1	164.1	1.957	1.957	1.957	1.957		5			B. 7. 6	647			8.479	3.479	5.479		2	i	MACH FEET	960.4	999	200 ·			966.		
DATE 19 AUG 74						. H																																	

## MSFC 578(SA19F) 142-IN SRB (159) MBE1

(R\$1181) ( 01 NOV 73 ) PARAMETRIC DATA

XXX : 100   100	#EFERENCE DATA .5030 SA. IN .8000 IN. .0056	17.A ENRP = 7100P = 200P =	8.5570 IN. .0005 IN.			BETA = FADSTK = ATHENG = CONFIG =	. 000 PMI . 000 AFTS . 105 ATMS	PMI = AFTSTR = ATHS = SHOSTR =	
		<b>264 NO.</b>	268/ 0 EN/L =	5.13	RUM NO. 266/ D RN/L = 5.13 GRADIENT INTERVAL = -5.00/ 5.00	00, 5,56			

. 000 000 000 000

Ę	. 00400	. 95310		- 100649	05729	95749	-, 50715	60860		94379	60059		Ę	05610	03690	05310	-, 04520	00920	90669	.01810.	99799	.00127
CYFE	. 58835	£46A9		. 96329	. 07165	, 08565	. 06489	17945		. 03450	-, 09574	00' 2'00	CTE	. 56495	.12990	.11369	. 08249	.07450	.10569	.04779	.07649	50535
£	.07460	CACAC		.15279	.11560	.13225	12799	2007		.15975	.05286	VAL = -5.00/	£	.07770	. 57135	08750	112410	14240	15139	.14525	.11415	60412
ಶ	57270	60070		.66589	.76450	.86275	94790		21606.	.76989	.92114	GRADIENT INTERVAL =	5	.52520	55880	E6449	74270	49120	94540	1.01455	78279	1954E
	1.61940		1000	2.02390	2,10639	2.59149	1 07050		3.44203	2,19569	. 56439	4.19 GRA	CL.	1.49410	1.55570	1. 14660	95490	2000	2.4920	01407	9,756-1	1000
3	14020		1.726.1	2,50650	3.29655	74245	S KOGAG	B. 0.00.0	026.0.9	3.27919	.24578	# ZNA	3	1,16510	47730	* X6060	2000	74746	4 44790	97.36	21770	
AM PMA		3000	11.490	15.550	6.4	612		21.12	29.750	19.610	CRADIENT	NO. 269/ 0	At PWA	0.500				13.350	53.503		28.33	13.61
777		200	4.450	4.459				4.430	4.459	4.450		2	77	3					Ř.			Ž.

(R911C1) ( 16 AUG 74 )

MSFC 578(SA10F) 142-IN SRB (139) NBE1

DATA	PHI = .000 AFTSTK = .000 ATHS = .000 SHOSTK = .000						-																									
PARAMETRIC DATA	.050 .050 .156		GE	. 00000	. 00960	. 99099	. 00050	. 96996	. 00000	. 96569	. 99599	. 99999		CBL	. 00000	.00000	.00000	. 00000	.00000	.00000	.00000	. 00000	. 00500		មិ	02560	03060	99549	52895	05630	93956	02960
	BETA = FWCSTK = ATHRNG = CONFIG =	-5.00/ 5.00	CYNM	39936	-,10000	1.02629	3.95345	4.25370	4.07220	4.19350	4.29165	.25424	-5,00/ 5,00	CYNM	-,31740	.09180	1.54790	2.11890	.52569	83969	-1.45749	2.13815	96229	-5.00/ 5.00	UNA	. 58560	. 08880	.12290	.10519	. 09150	.13570	.13775
			CYN	.63910	.86789	1.42935	1.12270	.96749	.60510	.13655	1,13280	52473		CYN	.88229	.96940	1.32750	.62160	. 55100	09730	00920	.61770	05724		E.	15370	.15820	.17769	.17840	19790	.19860	26360
		GRADIENT INTERVAL =	ర	.7986	.76779	.68910	.60315	.44259	.33176	.23670	59970	52772	GRADIENT INTERVAL =	đ	.76470	.74910	.67689	.56079	.42690	.27949	.18785	.55510	02886	GRADIENT INTERVAL =	ð	1.52240	1.05660	1.12329	1,19890	1.26870	1,29290	1 29565
		3.54 GR	CLW	5,77310	6.36450	7.05169	7,51879	8.53789	8,45945	8,74900	7,37629	.14464	4.93 GR	₹	6.11150	6.69745	8.17990	9.40250	10.51350	11,29090	11.45195	9.55670	.26961	6.18 66	3	3,99439	4.28110	5,02590	5,382,40	5.77679	6.63629	7 67470
	5.5570 [N. .0000 IN. .0000 IN.	B RN/L =	Š	3,35160	3,77219	4.59315	5,73619	6.55625	7,77850	8.25510	5,77669	.24519		Ž	3 71999	4.14530	1 19890	1000 F	6.78230	7.91640	8.47890	5.92660	.23545	G RN/L =	3	6.52940	7,13860	8.45335	9.78730	11,18645	12,43710	
	<b>11</b> 11 (1	RUN NO. 54/ 9	AH PHA	30.990	32.989	36.150	40.140	44.219	48.275	50.175	40.140	GDADIENT	RUN NO. 53/ 0	AI PHA	אל טג	100.00 0.00	36 440	60.530	44 650	18 750	50,680	40.541	GRADIENT	RUN NO. 272/ 0	170	ALT-11A	32.170	16.120	46.460	44.620	48.759	
REFERENCE DATA	.8535 SQ. IN XMRP .8555 IN. YMRP .8555 IN. ZMRP	RUN	3243	962	961	961	396	395	966	Agr.	965.		NO.	204	009	ממא.	000		n 00 4	665	666	665	•	RUK		אארח א	200.4	000.4	000.4	000.4	060.4	
	SREF = LREF = BREF = SCALE =																															

		000.
(R911C1) ( 16 AUG 74 )	C DATA	PHI = AFTSTK = ATHS = SHDSTK =
(R911)	ARANETRIC DATA	.000 .000 .100 1.000
	•	BETA = FWDSTK = ATHRNG = CONFIG =
MSFC 578 (SAIDF) 142-IN SRB (139) NBE1		5.5570 IN. .6000 IN. .0000 IN.
	REFERENCE DATA	.5939 58. IN XMRP = .6995 IN. YMRP = .6959 IN. ZMRP = .9956
		SREF = LREF = BREF = SCALE =

RUN NO. 271/ 0 RN/L = 5.10 GRADIENT INTERVAL = -5.00/ 5.00	
. 271/ 0 RN/L = 5.10 GRADIENT INTERVAL =	5.00
. 271/ 0 RN/L = 5.10 GRADIENT I	-5.00/
. 271/ 0 RN/L = 5.10 6	INTERVAL =
. 271/ 0 RN/L = !	GRADIENT
0 /112	5.10
_	RN/L =
RUN NO.	271/ 9
	RUN NO.

### APPHA CNN CLM CLM CNN CNN CNN CNN CNN CNN CNN CNN CNN CN			•		į	77.	CVNM	Ē
29.900 6.06030 3.20669 .97900 .15070 .03910 31.870 6.65065 3.58500 1.01270 .15490 .04070 35.960 7.89970 4.15560 1.01270 .17490 .04070 35.960 7.89970 4.15560 1.0270 .17780 .06600 44.0120 1.05950 4.07110 1.23760 .19800 .03240 44.170 10.59560 4.07110 1.23760 .19800 .03240 50.200 11.79840 5.85850 1.24590 .19070 .05650 50.200 12.34400 6.35830 1.22900 .19070 .05650 60800 EADIENT .31287 .01357 .00232 .00166 ALPHA CNM CLM CAMPAPHA CNM CNM CAMPAPHA CNM CNM CAMPAPHA CNM	MACH	AL PHA	₹	Į	5			0 0 0 0
31.870 6.65565 3.58500 1.01270 .15490 .04070 35.960 7.89970 4.15560 1.08510 .17785 .06050 40.060 9.25550 4.49020 1.16450 .18140 .06050 44.170 15.59560 4.87115 1.23769 .19809 .03240 48.260 11.79845 5.85550 1.24595 .20120 .10869 50.260 12.34409 6.35835 1.22909 .19970 .05559 6RADIENT .31287 .14317 .01357 .05232 .05166 29.735 6.08470 2.71980 1.51335 .16550 .08040 29.735 6.08470 2.71980 1.51335 .16550 .08040	7	20 900	6.56935	3,25669	.97900	.15970	. 03910	-, 06610
31.870 6.52559 3.18550 1.01510 .17789 .06000 35.960 7.89970 4.15560 1.06510 .17789 .06000 44.170 15.5550 4.4910 1.23760 .19800 .03240 48.266 11.79840 5.85650 1.24590 .19800 .03240 50.260 12.34400 6.35630 1.22900 .19070 .05650 6RADIENT .31287 .14317 .01357 .00232 .00166 ALPHA CNH CLM CA CYM CYNH 29.735 6.06470 2.71980 1.01335 .16500 .06040	000				01930	15490	04070	01119
35.960 7.69970 4.15560 1.08510 .17780 .06000 40.060 9.25550 4.49020 1.16450 .18140 .03660 44.170 10.59560 4.87110 1.23760 .19800 .03240 48.260 11.79840 5.85650 1.24590 .20120 .19860 50.260 12.34400 6.35830 1.22900 .19070 .05650 6RADIENT .31287 .14317 .01357 .00232 .00166 4.170 CYNH ALPHA CNM CLMM CA CYM CYNH ALPHA CNM CLMM CA CYM CYNH CA CA CYNH CA CONGOL CA	4.459	31.875	6.65562	3.36350	1.016.0	,		
40.060 9.25550 4.49020 1.16450 .18140 .04660 44.170 10.59560 4.87110 1.23760 .19809 .03240 48.260 11.79840 5.85650 1.24590 .20120 .10869 50.260 12.34400 6.35830 1.22900 .19070 .05550 6RADIENT .31287 .14317 .01357 .00232 .00166 M NO. 270,0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 29.735 6.08470 2.71980 1.01335 .16500 .08040 34.660 6.76890 3.13590 1.05560 .15960 .07660	7460	TR ORD	7.89970	4.15560	1.98510	.17785	. 96999	U2363
40.660 9.25559 4.59629 1.123769 1.9809 0.03249 44.170 10.59560 4.67110 1.23769 1.9809 0.03249 50.260 11.79840 5.88590 1.22900 1.9070 0.05650 50.260 12.34409 6.38830 1.22900 1.9070 0.05650 6RADIENT 31287 14317 0.01357 0.0232 0.0166 M NO. 270/0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/5.00 ALPHA CNM CLM CA CYM CYNM 29.73G 6.08470 2.71980 1.0133G 1.6500 0.06040					4 46480	10110	14669	91 52 9
44.170 10.59560 4.07110 1.23760 .19809 .03240 48.260 11.79840 5.85650 1.24590 .20120 .10860 50.260 12.34409 6.35830 1.22909 .19970 .05650 6RADIENT .31287 .14317 .01357 .00232 .09166 N NO. 270,0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 ALPHA CNM CLM CA CYM CYMM 29.735 6.08470 2.71980 1.01335 .16500 .08040 31.660 3.13590 1.05560 .15960 .07669	4.455	40.969	9.25550	4.49023	1.10401			
48.265 11.79845 5.85650 1.24595 .20125 .10865 55.265 12.34409 6.35835 1.22909 .19070 .05655 6620 6620 12.34409 6.35835 1.22909 .19070 .05655 6620 12.34409 6.35837 .01357 .01257 .01065 6.00679 5.00 6.00679 2.71980 1.51335 .16506 .06049 6.7669 3.1869 3.18960 1.05669 .15960 .07669		44 170	19,59560	4.87119	1.23760	.19800	. 03249	-, 93659
48.269 11.79840 3.63550 1.2359 1.2259 1.9079 1.9070 1.90559 6.3559 1.2290 1.9070 1.9070 1.90559 1.2290 1.9070 1.9070 1.90166 1.00166 1.001670 2.707 0 GN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 ALPHA CNM CLM CA CYM CYNM 29.759 6.06470 2.71980 1.01330 1.6500 1.6500 0.08040 1.6500 1.5560 1.5560 0.08040	300				20270	20120	10869	02910
50.200 12.34400 6.35630 1.22900 .19070 .05650 GRADIENT .31287 .14317 .01357 .01232 .00166 N NO. 270/0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 ALPHA CNH CLM CA CYM CYNH 29.730 6.06470 2.71980 1.01330 .16500 .08040 31.640 6.76800 3.13590 1.05560 .15960 .07660	4.459	48.260	11.79845	3.83630	1.24595	27177	•	
GRADIENT .31287 .14317 .01357 .00232 .00166  N NO. 270/ 0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00  ALPHA CNM CLWM CA CYM CYNM 29.735 6.06470 2.71960 1.01335 .16500 .08040 31.696 6.71890 3.13590 1.05560 .15960 .07660		40 960	0077% C1	6.35830	1.22900	.19970	. 55655	04503
GRADIENT .31287 .14317 .01357 .01232 .01160 N NO. 270/ 0 RN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 ALPHA CNH CLM CA CYM CYNH 29.735 6.06470 2.71980 1.51335 .16500 .08040 31.646 6.71890 3.13590 1.05560 .15960 .07660	904.4	22.60	2011					64000
N NO. 270/ 0 FN/L = 4.18 GRADIENT INTERVAL = -5.00/ 5.00 ALPHA CNM CLMM CA CYM CYNM 29.735 6.08479 2.71980 1.51335 .16500 .08949 31.666 6.71899 3.13590 1.05569 .15969 .07669		GRADIENT	.31287	.14317	.01357	, 55232	99166	90972
ALPHA CNM CLMM CA CYM CYNM 29.73G 6.0847D 2.71980 1.0133G .1650G .08040 31.666 6.7080G 3.1359G 1.0556G .1596G .0766G	25	Š		_	RADIENT INTER	RVAL = -5.(		
29-73 6.06470 2.71980 1.01330 .16500 .08040	2	AH PHA		¥.	ฮ	£	CYNH	ថ
29.759 6.16479 5.13590 1.05060 .15960 .07660				21000	1 61336	16500	58049	04660
34.890 6.70800 3.13590 1.05060 .15960 .07060	4.965	29.739		DOCT 3.5				00000
	4 960	31.695		3,13590	1.05560	.15965	.0765	noc+n

2042	AII PHA	E C	₩)	<b>5</b>	E.	CYNH	ಕ
500	20 746	6. 08470	2,71980	1.01335	.16500	. 58545	04660
96.4	11 April	6.70899	3,13590	1.05560	.15960	.07669	04560
1.965	35.750	7.97090	3,36410	1,13250	.17899	.01130	01499
96.4	39.810	9.40110	3,65920	1,22030	19910	.01639	.03600
1000	43.950	10.76130	4.13550	1.29510	.24900	.02715	01720
4.960	47,955	12,95470	5.15520	1.2697	.20840	.03100	.00210
4.965	49,900	12.58449	5,62590	1.25830	.19285	. 03580	-,09739
	<b>GRADIENT</b>	.32531	.13259	.61333	.00262	50205	60200

SREF = LREF = BREF = SCALE =

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MSFC
DATA,
SOURCE
TABULATED

PARA BETA = FWGSTK = ATHRNG = 1	MSFC 578 (SAISF) 142-IN SRB (139) NBE1	REFERENCE DATA	.5030 SQ. IN XMRP = 5.5370 IN. .8055 IN. YMRP = .0505 IN. .8059 IN. ZMRP = .0509 IN.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2-IN SRB (139) NBE1		
(R911D1) ( 01 NOV 1 ARAWETRIC DATA .055 PNI = .055 AFTSTK = 1.955 ATMS = 1.955 SHDSTK =		_	BETA = FWDSTK = ATHRNG = CONFIG =
	(R911D1) ( 01 NOV 73 )	ARAMETRIC DATA	PHI AFTSTK ATHS SHDSTK

5.90
-5.00/
اا پ
INTERVAL
GRADIENT
3.68
н
RN/L
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217/
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RUN NO.

# RUN NO. 216/ 0 RN/L = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

i	4110		ž	ð	CYM	CYNM	G
	ALTIA			;	1		01100
F03	U75 U5		19,85020	.35700	-,62999	-1.67475	. 15410
7			11 00050	25660	36830	-2.86755	. 92480
.593	DC2.20		11.3000	1		0000	0.00
F 0.7	56.275		13,16350	. 54775	18445	-2,61329	.usic.
	202 03		14.47385	-,19749	08750	-1.65600	.03180
000	7		14 94595	- 24470	15840	.18890	, 04000
. 593	100.40		5576	2777	ב מפשפת	1 30620	.64135
. 593	68.330		14.77499		10000	0 0 0 0 0	00110
. 593	75,229		14.63995	28175	18249	-1.18119	10100
100	69.369		14,38510	-,11569	69136	-1,55490	.03310
	CCAL TENT	.22530	.18768	-, 93275	.01836	. 08052	.00111

# RUN NO. 218/ G RN/L = 6.36 GRADIENT INTERVAL = -5.05/ 5.00

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7777	AHG IA		<u> </u>	ర	ž	ZZ.	<b>1</b> 85
			,			00000	64 4 70
100	59,710		17.26100	.44840	52430	0.000	
3				00004	0.484	- 21276	. 94120
506,	52.640		18.33839	neepe.			
	25.0	11 24650	07 5774A	22845	.15170	.61670	. 51975
	20.730						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
TUO	64.749		21.11416	.12290	44885	12330	
					0000	00000	25750
100	64.740		20.54100	14951	6009.	nento.	
•	•			0000	11010	12000	17277
5U6 .	68.670		18.21105	GC990.	-11310		
	1		00000	DE3C1	21826	04596	. 9279
.903	75.540		17.20335	CCOTT.	10111		
			21 26600	11510	17389	15700	. 02341
. 903	69.760		21.10030	,			
	COADTENT		00102	91783	-, 51658	01164	-, 55555

SREF = LREF = BREF = SCALE =

## MSFC 578 (5A10F) 142-IN SRB (139) NBE1

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(R911D1)

SOSO SA. IN XMRP.		5.5575 IN.				BETA =	. 966	HI "	000
YMRP							ממט	AFTETE =	000
		. MI 0000.				ATHENG :	661.		. 000
ZMEP	11	. NI 5000 .					1,000	*	.059
RUN NO.		219/ 0 RN/L =	6.78 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
7	AH PHA	30	3	ಶ	CYN	CYNM	GBL		
4 Tarin	45 75		14.05170	.92589	29580	02139	.01409		
901.	679 25		14.44720	. 85415	32560	08789	.01660		
201.	AK KON		15,55410	.77920	31930	15980	.03960		
1.130	20.730		16,46559	.73559	-,39160	-,42169	.03330		
301	64. 739		15.96970	.72240	27179	-,15970	.04790		
961.1	68 710		15,35965	.64169	25780	24520	. 04559		
201.	70 570		14,41585	.62579	28430	24119	.03730		
061.1	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		16.23519	.73455	-,31650	-,43500	. 04399		
7.130	GRADIENT		.03591	01384	.09237	09968	.00139		
		į	3	5	C	CYNEE	GBL		
MACH	4			19116	1 2920	14139	02249		
1.950	50,600	,	9.53830	561771	20600	11520	01220		
1.950	52.490	•	9.5444	1.50139	00000	14690	02450		
1.950	56.538	• •	19.23220	1.17.90	2416	14050	12780		
1.950	60,530	-	10.17290	1.12639	00010-	0004	ה מפינהם		
1.950	64.585		10,72229	1.93709	-,31620	06001-	00000		
1.950	68.640		11.77610	.94780	10000	1003.	00000		
1.959	70.519	•	11.39689	. 2886	0.0000	CEOF	02750		
1.950	66.500	5	9.75655	1.11470	-, 50000	00000	00000		
	GRADIENT	T .25687	.11171	01621	101168	19660	3ccn0		
2	RUN NO. 0	67/ 1 RN/L =	6.97	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	.007 5.09			
	410.14	į	3	ð	Ç	CYNM	ð		
		-	6.79969	1.31996	29000	19530	01960		
	K9 940		7.26640	1.31950	28980	-,26570	-, 92450		
	AC 270		8,19190	1.30749	29350	-,25839	91379		
7.70	60.329		9.05840	1.26030	28690	-,22520	92399		
4 470	64.360		9.71350	1.14310	26299	22510	51778		
470	64.340	-	10.19620	1.02280	25820	21220	99855		
	70.260		10.32969	.96160	-,25520	19110	00610		
	AC 420		0 06970	1 25670	31580	23830	A2130		
						1 1 1 1 1 1 1	1 2 4 4 5		

SRB (139) NBE1 (R911F1) ( 22 FE6 74 )	PARAMETRIC DATA	5.5570 IN. BETA = .000 PHI = .0555 IN. FACSTK = .000 AFTSTK = .0555 IN. ATHRNG = .169 ATHS = .0555 IN. ATHRNG = 1.005 SHDSTK = .0555 IN.
MSFC 578(SA19F) 142-IN SRB (139) NBE1		5.5570 IN. .0555 IN. .8559 IN.
	REFERENCE DATA	.8050 SQ. IN XMRP = .8050 IN. YMRP = .8050 IN. ZMRP = .0556
		SREF = ERSEF = SCALE =

### 5.05 GRADIENT INTERVAL = -5.00/ 5.00 RUN NO. 222/ 0 RN/L =

20	AH PHA	N	¥ J	ర	M.A.U	CYNH	CBL
40.5	80 250	11.82440	10,63760	.20300	02270	.09810	.02220
	027.08	11.77369	9.32380	.28590	. 08269	.94560	. 63585
	85 020	12,54590	6,69269	.34810	-, 98639	1.33669	.00760
י ה ה ה ה ה	89 975	12,16989	4.25290	.44090	11495	1,11970	05370
	0 4 4 4 A A	12,57810	2.57819	.45750	01870	1.45840	. 05855
1 4	07.00	12.05700	1.34915	.30295	.07930	1.93550	.01630
	C F C C C	12.09750	78890	17930	.91720	2, 52995	00390
	000.00	12.15760	4.25370	.43950	-,13819	1.17449	.03339
,	COAPTENT	11466	50119	.00154	.00183	. 67796	50106

# RUN NO. 221/ 0 RN/L = 6.39 GRADIENT INTERVAL = -5.09/ 5.00

			•				
MACH	AL PHA		<u>C</u>	ď	υ¥	CYN	GBL CBL
90	80.450		12,46420	.43759	30279	97420	.04850
	82.300		11,53350	,43810	28915	04879	. 02859
100	86.210		9.02450	.43950	26049	.04790	.03750
	90.130		6.52155	.46240	23190	.00480	. 52928
0	620.46		4,15379	39766	25490	.01970	. 02899
100	98.500		2,10820	.26640	25000	.17330	.01785
ָ ֖֭֓֞֝֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֡֓֓֓֓֡֓֓֓֡֓֓֡֓֡֓֡֓֡	99.850		.74775	.19765	27259	.28570	.04529
106	95,135	16,45630	6.57679	.46999	-,23975	.03769	. 52465
	GRADIENT		60405	01123	.05183	.01483	00057

### 6.78 GRADIENT INTERVAL = -5.00/ 5.60 RUN NO. 254/ 0 RN/L =

E E	AII PHA	Ā	CLMM	ర	CYN	CYNM	9
101	100.448	19.34420	6.25850	03240	.39640	.28710	. 62980
107	98.550	19,49030	6.66320	.08569	39910	,32240	. 02850
101	94.590	19,95770	7.56299	.29270	.35830	.25790	. 63789
701	90.630	20.66199	8.52200	47079	.33050	.29330	.02380
	86. 67fi	24,15289	16.07999	.69590	.33510	.32230	. 03899
	82 200	19.93840	16.78890	.71349	.31349	.36009	. 53260
101	80.810	19.71345	11.99779	.75395	.35210	.40419	. 62220
197	90.630	25,02675	8.48390	.47270	.33620	.27790	.03179
	GOADTENT	-, 92349	25523	03985	. 55485	05487	.00911

### MSFC 578 (SA10F) 142-IN SRB (139) NBE1

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7	
FEB	
22	
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(R911F1)	

	= .000 STK = .000 S = .000 STK = .000																		•				
PARAMETRIC DATA	.000 AFTSTK .000 AFTSTK .100 ATHS 1.000 SHDSTK		g,	02860	02490	-, 02469	03890	63566	02739	02280	03180	95001		GBL	02520	01350	-, 02069	-, 92658	92119	-, 02120	00590	52585	. 00022
	BETA = FWDSTK = ATHRNG = CONFIG =	-5.00/ 5.00	CYNM	-, 12439	09595	97316	-, 69 52 5	09840	-, 05715	05960	05410	. 55229	99' 5'00	CYNH	-,26630	23480	~, 19535	18830	-,15479	15000	12470	-, 19096	. 55627
		RVAL = -5.	C.	-,39040	-,38879	38550	36729	-,34049	-,31190	29590	-,35576	.05492	GRADIENT INTERVAL = -5.00/ 5.09	CYM	-,37849	36560	33699	32380	27849	26530	25520	-,32949	. 99635
		GRADIENT INTERVAL =	ర	.61299	.54930	.41410	.26570	.15110	07680	16995	.26050	03965	ADIENT INTE	ฮ	.67050	.65419	.46549	.29920	.13199	54545	12495	.29565	-, 94059
		7.18 GR	# TO	10,62890	19,36749	9.68390	8,93695	8,21585	7,49559	7,03640	8.92450	18449	6.94 GR	¥.	10,01569	9.84950	9.37680	8.65230	7.98510	7.31690	7,99279	8.68969	-, 15686
	5.5570 EN. .0099 IN. .0998 IN.	S RN/L =	Š	19,55540	19,65810	19,84830	19,95155	19,76555	19,49285	19.28450	19,75170	01095	G RN/L =	3	18,66040	16.81700	19.06980	19,11479	19,06390	18.73819	18,52250	19,57169	59571
	нин	RUN NO. 136/ 6	AN PHA	80.559	82.420	86.399	96.359	94.340	98.300	159.180	90.350	GRADIENT	RUN NO. 88/	AH PHA	80.320	82.240	86.186	90.185	94.180	98.160	105.039	95.185	COAPTENT
REFERENCE DATA	.8555 S8. IN XMRP .8555 IN. TMRP .6555 IN. ZMRP	RUN	2012	1 95.1	150.1	1 951	1.951	1.951	150	1961	156.6		25%	ECA2	9.479	3.479	1 479	84 A 79	3.479	3.479	3.479	3.479	•
	SREF = LAEF = BREF = SCALE =																						

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	(R911H1) ( 01 NOV 73 )	IATA	PH	
	(R911H1)	PARAMETRIC DATA	.000 A .000 A .100 A .100 S	
			BETA = FWDSTK = ATHRNG = CONFIG =	00'\$ /00'\$- :
ABUCATEU SOUNCE CATAL TOTAL TOTAL	MSFC 578(SAIDF) 142-IN SRB (139) NBE1			RUN NO. 155/ 0 RN/L = 5.01 GRADIENT INTERVAL = -5.00/ 5.00
מערר מיויים	A19F) 142-IN			L = 5.01
I ADULATED SO	MSFC 578 (S		5,5578 IN. .0808 IN. .0888 IN.	155/ 0 RN/
		DATA	IN XMRP : YMRP :: ZMRP ::	RUN NO.
2. 74		REFERENCE DATA	.8030 S8. IN .6005 IN. .6000 IN.	
CATE 19 AUG 74			SREF = LREF = BREF = SCALE =	

77.	7H0 17	Š	*	Ծ	Y.	CYNM	СВГ
	40.00	7 00060	-6 7:21B	-1.86870	.48600	-1.05630	-, 02340
960.	163.631			00101	2 47446	-1.06720	.01920
. 596	127.975	7,51695	-7.29/UU	1000		03602	00440
. 596	123,960	6.59810	-7,31649	-1.55630	1.12250	00700-	
39.5	119.960	9,59310	-6,19469	-1.19740	. 89680	.85100	.03369
404	115,950	10.34155	-5,13679	-,92199	.69550	1,19540	. 63539
	900	11 01680	-4.54825	59570	.76969	1.07690	01980
070	111.000	200		06037	74070	1.05549	. 99649
.596	119,969	11.21225	-4.07855	1.43969	CICTI		
596	119,970	9.48570	-5,89510	-1.28130	. 83990	1,75390	-, 51289
	GRADIENT	21511	-,15926	07238	.03678	12345	-, 09034
ND .	RUN NO. 154/ G		6.34	GRADIENT INTERVAL =		CYNM CYNM	CBL
HYCH H	ALPHA	EZ		ş	::-		
6	129,620	15,48945	-7,72879	-1.68830	.33510	53150	-, U291u
	127.691	11,15846	-8.12525	-1.57345	.37490	14265	03220
100	20 FC1	12 39895	-8.32779	-1,31679	.38965	-,15285	01770
700.	000.001	13 12360	-7.77810	-1.09039	.30750	.12540	00850
106.	119.00	00000 64	7 48450	-,72559	.41355	.21785	-, 00630
106.	115.669	13.00.11	00101	16497	TARAN	.26589	.05289
.901	111.659	14.59090	-6.23429	56400	00000	* 5440	01040
106.	109.760	14.94595	-5.27510	-,20279	10002	0 0 0 0 0 0	1000
.901	119,650	13,19289	-7,72699	-1.58610	.35890	02160	
	GEADTENT	21835	11917	07488	.59227	01790	-, 05291

3	AHO 1A	N.	<b>₹</b>	ð	CYN	CYNK
					OCECO	15250
197	129,650	13,27000	-1.89530		00007	1010
	107	14 07501	-1.41399		.28080	-, 19965
13/	167.130	300			0.000	COREC
101	123.749	15.27910	95185		. 20010	
	012	וער הסחקה	55520	-1.32739	.21510	08260
7.	113.632	1			01110	14740
101	115,730	17.03510	.54689		1.4403.	
	46.	17 79120	1.56450		.19245	. 55126
13/	111.00				0.000	0.0450
197	1.09.860	18.58865	2, 09320		. 10043	
	277	14 091191	39735		,22489	06340
1.197	117	100000			44.00	00000
	CCANTENT	23947	19466	07588	. 05462	10010

CBL .00990 .01670 .01630 .02490 .00830 .01350 .03420

### TABULATED SOURCE DATA, MSFC TWT 578

MSFC 578 (SAIDF) 142-IN SRB (139) NBE1

(R911H1) ( 01 NOV 73 )

PAGE 12

	000.
DATA	PHI = AFTSTK = ATHS = SHDSTK =
PARAMETRIC DATA	.060 .060 .100
•	BETA = Fubstk = ATHRNG = CONFIG =
	5,5570 IN. .0000 IN. .0000 IN.
	XMRP :: YMRP :: ZHRP ::
REFERENCE DATA	. 65 55 56. IN. 65 55 5. IN.
	SREF = LREF = BREF = SCALE =

SH	
1.095	
ATHRNG =	= -5.00/ 5.00
₹ 8	-5.06/
	GRADIENT INTERVAL =
	GRADIEN
	7.17
.0050 IN.	RN/L =
. 000	152/ 0
ZMEP =	RUN NO. 152/ U RN/L = 7.17 GR
.0555 IN.	

2							
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	169.169	12.040.04	177500	-1.89579	32530	-, 08930	.01810
947	127.683	14. 20£40	9 86410	1.59330	31710	. 94029	. 02736
.947	123,890	14.63030	3.24550	-1.26630	.32980	. 96579	.02699
196	119.000	DECENT ST	3.58930	95825	.31650	.14600	. 92539
	669-611	17 55850	3.99410	67439	.33770	.12739	. 51230
,	610.111	17 82740	4.47619	53570	.33440	.11050	.01240
1,347	006.601	15 22610	3.55480	-1.24190	.29120	.16940	. 92570
, ,	GEACIENT GRACIENT	-,27953	-,14364	06961	50120	61177	.00542

ď
-5.00/
11
INTERVAL
GRADIENT
7.10
RN/L =
110/ 0
RUN NO.

				i		1100	ē
HITH	AI PHA	3	₹	ರ	¥		5
			06090	107CH C.	26890	.07859	.04080
3.479	129.950	11.4/3/9	1.50500	10010	3000		
740	100 500	12,69366	2,21269	-1.90840	.26029	.08220	.02970
n	10000		0 65140	DEGR 9	27310	15560	.01840
5,479	124.010	13.20/40	Z*100*3	2000			01000
927 \$	129,016	14,36599	3.36980	-1.22685	.27899	. 09775	. c.u94u
	200	16 46340	3.97590	91120	.27430	. 06025	.64149
0.479	200-011	2000	20000	61800	27470	. 98459	.02169
3.479	111.969	16.39260	4.34639	00010-	1		
3.470	116.080	16.79990	4.83689	48050	.26500	00760.	10910
	190 040	14 35590	3,36999	-1.22810	.27125	.11320	.01330
D. 4.0	10.00					60000	99000
	GRADIENT	26871	14662	07939	02070	onne.	2000

5570 IN.  5520 IN.  5520 IN.  5520 IN.  522250 .06720  5.89350 .13350  7.22245 .13350  9.73260 .13230  9.73560 .13230  8.50695 .13550  11.62240 .13230  8.50690 .10120 3073706482  0. RN/L = 5.15  CNM CLMM 7.96945 .51080 4.4000 6.72270 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .51080 7.95290 .70180 7.95290 .51080 7.95290 .51080	48 (139) NBE1			(R91111)	1) ( 01 NOV 73	1
E DATA  IN XMRP =0000 IN.  YHRP =0000 IN.  YHRP =0000 IN.  ZMRP =0000 IN.  ZMRP =0000 IN.  KUN NO. 264/ D RN/L = 6.25 ( 4.000 119.950 5.29250 .06720 4.000 119.950 5.29250 .06720 4.000 119.950 5.29250 .135320 4.000 119.950 5.29250 .135320 4.000 119.950 5.29250 .135320 4.000 119.950 5.29250 .135320 4.000 119.950 5.29250 .135320 4.000 119.960 5.8930 .135320 4.000 119.660 8.49540 .135320 4.000 119.660 11.6220 1.35320 4.450 119.910 7.96940 .51080 4.450 110.180 6.72270 .39680 4.450 1140.02 7.95290 .39680 4.450 1140.02 7.95290 .39680 4.450 1140.02 7.95290 .39680 4.450 1140.02 7.95290 .39680 4.450 1140.02 7.95290 .39680 4.450 1140.02 7.95290 .39680 4.450 1144.290 11.2030 .79211 4.960 144.290 6.78230 .9347 4.960 144.290 6.78230 1.0384 4.960 135.110 10.61750 2.0882 4.960 135.110 10.61750 2.0882 4.960 135.110 10.61750 2.1067						2 .
IN XMEP = 5.5570 IN.  THRP = .0000 IN.  ZMRP = .0000 IN.  ZMRP = .0000 IN.  RUN NO. 264/ D RN/L = 6.25  4.000 142.300 7.22250 .06720  4.000 139.660 8.49340 .13020  4.000 139.660 8.49340 .135370  4.000 139.650 8.49340 .135370  4.000 139.650 8.49340 .135370  4.000 139.650 8.49340 .135370  4.000 139.650 8.5690 .10220  4.000 139.650 8.5690 .135370  4.450 139.650 8.5690 .41400  4.450 139.910 7.96290 .51680  4.450 140.010 7.96290 .51680  4.450 140.02 7.96290 .51680  4.450 131.440 CNH CLMM CLMM  4.450 144.110 6.72270 .50750  4.450 131.440 10.43250 .56690  4.450 131.440 10.43250 .56690  4.450 144.290 11.68930 .79214  4.960 144.290 5.51560 .93894  4.960 144.290 6.78230 .93494  4.960 136.150 8.05540 1.0384  4.960 136.150 9.3159 1.7018  4.960 132.110 10.61759 2.0867  4.960 132.110 10.61759 2.1067				PARAMETRIC DATA	: DATA	
THEP = .0000 IN.  ZMAP = .0000 IN.  RUN NO. 264/ D RN/L = 6.25  4.000 140.950 5.29250 .06720  4.000 147.960 5.8930 .13020  4.000 133.520 9.73580 .13530  4.000 133.520 9.73580 .13530  4.000 133.520 9.73580 .13530  4.000 133.520 8.5690 .13530  4.000 135.520 8.5690 .13530  4.450 130.010 7.9640 .51080  4.450 140.010 7.9640 .51080  4.450 140.010 7.9620 .39680  4.450 140.02 7.95290 .39680  4.450 140.02 7.95290 .56290  4.450 144.110 6.7270 .50750  4.450 140.02 7.95290 .56290  4.450 144.290 10.4350 1.56920  4.450 144.290 1.56320 .93474  4.960 144.290 6.78230 .93474  4.960 144.290 6.78230 .39480  4.960 144.290 6.78230 .39480  4.960 144.290 1.03840 .103840  4.960 144.290 6.78230 .39474  4.960 135.110 10.61750 2.08824  4.960 135.110 10.61750 2.0882				.000		.000
ZMRP = .GGGG IN.  HACH ALPHA CNM CLNM 4.00G 149.95G 5.2925G .GG72G 4.00G 149.95G 5.2925G .GG72G 4.00G 143.95G 5.8933G .1302G 4.00G 143.35G 7.2224G .1305G 4.00G 133.52G 9.7356G .1305G 4.00G 135.52G 8.50GG .1012G 4.00G 135.52G 8.50GG .1012G 4.45G 140.01G 7.9624G .5136G 4.45G 140.01G 7.9624G .5136G 4.45G 140.01G 7.9629G .396GG 4.45G 130.18G 4.932G .396GG 4.45G 131.44G CNM CLMM 4.45G 131.44G 10.432G 1.2632G 4.45G 131.44G 10.432G 1.2632G 4.45G 144.29G 11.023G .5629G 4.96G 144.29G 5.5156G .9347G 4.96G 144.29G 5.7627G .9347G 4.96G 144.29G 5.7627G .30347G 4.96G 144.29G 5.7627G .30347G 4.96G 132.11G 10.6175G 2.096Z 4.96G 132.11G 10.6175G 2.096Z 4.96G 132.11G 10.6175G 2.10674				. 050	~	000.
RUN NO. 264/ D RN/L = 6.25  MACH ALPHA CNH 4.000 140.950 5.29250 .06720 4.000 147.960 5.8930 .13020 4.000 133.520 3.73260 .13530 4.000 133.520 3.73260 .13050 4.000 133.520 3.73260 .13050 4.000 133.520 3.73260 .13050 4.000 133.520 3.73260 .10020 4.000 133.520 3.73260 .10020 4.000 133.520 8.50600 .10020 4.450 130.010 7.9640 .51080 4.450 140.010 7.96200 .34400 4.450 144.110 6.72270 .50750 4.450 135.910 9.19360 1.26301 4.450 135.910 9.19360 .54620 4.450 135.910 9.19360 .56600 4.450 144.290 10.43290 .56290 4.960 144.290 6.78230 .93474 4.960 144.290 6.78230 .93474 4.960 135.110 10.61750 2.08824 4.960 135.110 10.61750 2.08824 4.960 135.110 10.61750 2.08824 4.960 132.110 10.61750 2.08824 4.960 132.110 10.61750 2.08824 4.960 132.110 10.61750 2.0882			ATHENG =	001.	CHOSTE :	500
ALPHA CNH CLNH 149.950 5.29250 .06720 147.960 5.89930 .13920 143.800 7.22240 .13950 139.660 8.49540 .13950 139.650 9.73560 .13950 139.650 9.73560 .10120 6RADIENT3073706482 6RADIENT3073706482 148.210 5.59600 .414000 148.210 5.59600 .414000 125.310 4.93260 .54620 125.800 10.43290 .54620 125.800 10.43290 .566500 144.000 7.95290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.000 10.43290 .566500 144.290 6.78230 .93479 144.290 6.78230 .93479 144.290 6.78230 .108492 144.290 6.78230 .108492 144.290 6.78230 .108492			1 PEO	6 n . 1		
ALPHA CNM CLMM 149.955 5.29550 .06720 147.965 5.89930 .13020 143.856 8.49545 .13635 139.665 8.49545 .13635 131.456 10.98475 1.18720 131.456 10.98475 1.18720 139.656 8.55695 1.18720 139.657 8.55695 1.18720 130.657 8.55695 1.18720 146.110 7.96940 .51080 144.110 6.72275 .51680 144.110 6.72275 .51680 148.210 5.59800 .34400 144.110 6.72275 .56750 155.915 9.19380 1.26739 148.210 10.43250 1.66920 6RADIENT3503506739 148.360 6.78235 .93471 148.250 8.02540 1.03841 148.250 6.78235 .93471 148.250 6.78235 .93471 146.239 8.02540 1.03841 1135.110 10.61759 2.08821	GRADIENT INTERVAL =	VAL = -5.90/	30, 5,00	·		
ALPHA CNM 149.950 5.29250 .00720 147.960 5.89930 .13020 143.800 7.22240 .13639 139.660 8.49340 .13950 131.450 10.98470 .13950 139.650 8.59690 .10230 6RADIENT3073706482 6RADIENT3073706482 144.110 6.72270 .51080 144.110 6.72270 .50750 148.210 9.19380 1.20130 148.210 7.96940 .51080 148.210 9.19380 1.20130 148.210 6.72270 .50750 148.210 6.72270 .50750 148.250 8.02540 1.03840 146.250 8.02540 1.03841 146.250 9.31550 1.03841 136.150 9.31550 1.03841 136.150 9.3150 1.03841 136.150 9.3150 1.03841	5	C	CYNM	9		
147.960 5.89930 .13020 143.300 7.22240 .13630 139.660 8.49540 .13950 131.450 10.98470 1.13570 139.650 8.55690 1.05290 139.650 8.5690 1.05290 130.650 8.5690 1.05290 140.010 7.96940 .51080 140.020 7.96940 .51080 140.020 7.95290 .39680 140.020 7.95290 .39680 140.020 7.95290 .56520 131.400 11.02010 1.66920 6RADIENT3053506730 131.400 11.02010 1.66920 6RADIENT3503506730 140.230 8.02540 1.03841 140.230 8.02540 1.03841 140.230 8.02540 1.03841 135.110 10.61750 2.08820 135.110 10.61750 2.08820	-2,37090	12760	.05390	00600*		
143.300 7.22245 .13535 139.665 8.49540 .13950 131.455 10.98475 1.13757 129.415 11.62240 1.35370 129.415 11.62240 1.35370 129.415 11.62240 1.35370 129.415 11.62240 1.35370 130.655 0 RN/L = 5.15 NNO. 265/ 0 RN/L = 5.15 140.010 7.96940 .51080 140.020 7.96940 .51080 140.020 7.95290 .41460 131.840 15.4350 .56750 135.910 9.19380 1.20330 129.880 11.02515 1.68920 6RADIENT3503506730 140.230 8.02540 1.03841 140.230 8.02540 1.03841 146.250 5.51569 .93471 146.250 8.02540 1.03841 146.250 9.3159 1.7018 135.150 10.61759 2.08826	-2.40100	14095	.03280	.02839		
139,665 8.49545 .13950 135,525 9.73580 .62200 131,455 10,98475 1.13729 129,415 11,62240 1.35370 139,655 8.5695 .10120 GRADIENT3073706482  LALPHA CNH CLMM 140,010 7.96940 .51080 144,110 6.72275 .51590 144,110 6.72275 .54629 135,910 9.19360 .41400 129,880 11.02010 1.68920 129,880 11.02010 1.68920 129,880 11.02010 1.68920 129,880 11.02010 1.56500 148,360 5.5560 .35601 144,290 6.78230 .35691 144,290 6.78230 .35291 144,290 6.78230 .35291 144,290 6.78230 .35291 146,259 8.05540 1.03841 135,110 10,61750 2.06829	-2,43290	15989	.04399	. 93220		
135.520 9.73580 .82200 131.450 10.98470 1.18720 129.415 11.62240 1.35370 139.650 8.56690 .10220 GRADIENT3073706482 UN NO. 265/ 0 RN/L = 5.15 UN NO. 266/ 0 RN/L = 4.22	-2,47070	15650	. 59840	. 02569		
111.455 10.98470 1.18720 129.415 11.62240 1.35370 139.650 6.8.5690 1.0529 6.825706482 6.82570 1.0529 6.82570 1.0529 6.82570 1.0529 6.82570 1.0529 6.82590 1.05290 1	-2.52435	16600	.08370	58389		
129.415 11.62240 1.35379 139.650 8.50690 .10120 CRADIENT3073706482  NNO. 265/ 0 RN/L = 5.15  ALPHA CNH CLMM 140.010 7.96940 .51080 150.180 4.93260 .39680 144.110 6.72270 .51080 125.910 9.19380 .54620 125.910 10.43290 .56590 125.910 10.43290 .56590 125.910 10.43290 .56590 125.910 4.98500 .76291 114.290 6.78230 .92991 114.290 6.78230 .93941 114.290 6.78230 .93941 114.290 6.78230 .93941	-2.18220	17610	.15479	. 02679		
CRADIENT3073706482  CRADIENT3073706482  ALPHA CNH CLMM 140,010 7.96940 .51080 150,180 4.93260 .39680 144,110 6.72270 .50750 125,910 9.19380 1.20130 135,910 9.19380 1.20130 135,910 9.19380 1.20130 135,910 10,43250 .54620 129,800 11,02010 1.68920 CRADIENT3003506791 148,360 6.78230 .93479 144,290 6.78230 .93479 146,259 8.02540 1.008492 146,259 8.02540 1.008492 146,259 8.02540 1.008620 135,110 10,61750 2.08820	-2,04610	-,17130	. 98359	.04380		
GRADIENT3073706482  ALPHA CNH 140.010 7.96940 .51080 150.180 4.93260 .39680 144.110 6.72270 .39580 144.110 6.72270 .50750 140.022 7.95290 .36620 135.910 9.19380 1.20130 125.910 9.19380 1.20130 125.910 9.19380 1.20130 125.910 9.19380 1.20130 125.910 9.19380 1.20130 1250.310 4.89500 .79214 146.350 5.51560 .9347 146.250 6.78230 .79214 146.250 6.78230 1.03841 135.110 10.61750 2.0882 135.110 10.61750 2.10882		-,15189	. 09250	. 92669		
ALPHA CNM CLMM 149.010 7.96940 5.15 180.010 7.96940 5.1980 150.180 4.93260 5.95680 144.110 6.72270 5.0750 135.910 9.19380 1.50590 129.880 11.02010 1.56590 6.80010.02 7.95290 7.95290 7.95290 144.29 6.78230 7.9211 144.290 6.78230 7.9211 144.290 6.78230 7.9211 135.150 10.61750 2.08821 135.150 11.21210 2.1667		. 90210	-, 05279	. 65536		
ALPHA CNH CLMM 140.010 7.96940 .51086 150.180 4.93260 .39680 144.110 6.72270 .50750 140.022 7.95290 .54750 131.840 10.43250 1.2035 125.880 11.02030 1.68920 6RADIENT3503506793 ALPHA CNM CLMM 155.310 4.89500 .79211 146.350 5.51560 .93471 140.235 8.02540 1.03841 135.110 10.61750 2.08821	GRADIENT INTERVAL =		-5.90/ 5.00			
140.010 7.96940 .51000 150.180 4.93260 .39680 148.210 5.50600 .41400 144.110 6.72270 .50750 135.910 9.19380 1.56500 129.880 11.02010 1.56500 129.880 11.02010 1.56500 148.00 FN/L = 4.22  ALPHA CNM CLMM 150.310 4.99500 .79210 148.250 6.78230 .93471 146.250 9.31150 1.70181 135.110 10.61750 2.08820 135.110 10.61750 2.08820	ð	CYH	CYNM	GF		
150.180 4.93550 .39680 144.00 144.010 5.59680 .41400 144.110 6.72270 .50750 135.910 135.910 9.19380 1.20130 135.910 9.19380 1.20130 135.910 9.19380 1.20130 126.920 6RADIENT3503506791 148.360 5.51569 .79214 146.259 6.78230 .79214 135.159 9.31159 1.70184 135.150 11.21210 2.1667	-2.36530	15900	-, 00929	.04510		
148.210 5.59800 .41400 144.110 6.72270 .50750 135.910 9.19380 1.20130 129.880 11.02010 1.68920 6RADIENT3503506791 ALPHA CNN CLMM 150.310 4.89500 .79214 148.360 5.51560 .79214 144.290 6.78230 .79214 146.259 8.02540 1.03841 135.110 10.61750 2.0882 135.110 10.61750 2.1667	-2.25625	-,11700	.01620	.01110		
144.110 6.72270 .50750 140.022 7.95290 .54620 131.840 10.43250 1.56500 129.880 11.02515 1.68920 6RADIENT3503506731 ALPHA CNH CLMM 150.310 4.89500 .79211 146.290 6.78235 .93471 146.230 6.78235 .93471 146.230 6.78235 .93471 135.110 10.61759 2.08821 135.110 10.61759 2.0882	-2.28019	12855	. 02390	.01050		
140.022 7.95295 .54620 135.910 9.19380 1.20130 129.880 11.02010 1.68920 GRADIENT3503506791 ALPHA CNM CLMM 150.310 4.89500 .79210 148.350 5.51560 .82991 144.290 6.78230 .93471 145.250 8.02540 1.03841 135.110 10.61750 2.08820 135.110 10.61750 2.08820	-2,32865	13670	.01290	.04400		
135.910 9.19380 1.20130 131.840 10.43250 1.56500 129.880 11.02010 1.68920 GRADIENT3503506791 ALPHA CNM CLMM 150.310 4.89500 .79210 148.350 5.51560 .82930 144.290 6.78230 .93471 136.150 9.31150 1.70184 135.110 10.61750 2.08820 135.110 10.61750 2.08820	-2,37679	-,16540	91029	.02970		
131.840 10.43250 1.56500 129.880 11.02010 1.68920 GRADIENT3503506791 ALPHA CNM CLMM 150.310 4.89500 .79211 148.360 5.51560 .82921 148.290 6.78230 .93471 140.250 8.78230 .93471 135.110 10.61750 2.08821 135.110 10.61750 2.08821	-2,45390	18260	.01929	.03469		
129.880 11.02010 1.68920 GRADIENT3503506793 NO. 266/ 0 RN/L = 4.22 NN O. 266/ 0 RN/L = 4.22 ALPHA CNM CLWM 150.350 5.51560 .79219 148.360 5.51560 .79219 140.350 6.78230 .93471 130.150 9.31150 1.7016 135.110 10.61750 2.0882 135.160 11.21210 2.1667	-2.14165	17850	.01390	.00655		
GRADIENT3553556793  AN NO. 266/ 0 KN/L = 4.22  ALPHA CNM CLMM  150.310 4.89500 .79219  148.350 5.51569 .82949  144.290 6.78230 .93471  145.259 8.02540 1.03841  136.150 9.31159 1.7018  135.110 10.61759 2.0882  135.160 11.21210 2.1667	-1.99130	20270	.00110	.09799		
ALPHA CNH CLMM 150.310 4.89500 .79211 148.360 5.51560 .82990 144.290 6.78230 .93471 140.230 8.02540 1.03841 136.150 9.31150 1.7018 135.110 10.61750 2.0882 135.160 11.21210 2.1667	05883	.00394	. 00055	.00031		
ALPHA CNM 150,310 4,89500 148,360 5,51569 144,290 6,78230 140,239 8,02340 136,150 9,31150 135,110 10,61759 2	GRADIENT INTERVAL =		-5.00/ 5.00			
148.360 5.51560 144.290 6.78230 145.230 8.02540 1 136.150 9.31150 1 132.110 10.61759 2	ಶ	CYM	CYNH	CBL		
148,360 5,51569 144,290 6,78239 145,239 8,02540 1 136,159 9,31159 2 132,110 10,61759 2	-2.29620	12710	. 02650	.04820		
144,290 6.78230 140,239 8.02540 1 136,159 9.31159 1 132,110 10,61759 2 135,160 11,21210 2	-2.32290	12160	. 02580	.07210		
140,230 8,02540 1 136,150 9,31150 1 132,110 10,61759 2 135,160 11,21210 2		-,15010	-, 01970	. 97649		
136.150 9.31150 1 132.110 10.61750 2 135.160 11.21210 2		-,16920	92345	.05160		
132,110 10,61759 2 135,160 11,21210 2		18519	. 91 02 0	06600.		
135,160 11,21210 2		-,19555	. 99369	-, 99510		
		19439	. 99186	.00 <b>9</b> 00		
4 asn 146,220 8,07420 .95850		17636	. 51860	. 94819		
- 121341		.09368	. 00083	.05559		

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# TABULATED SOURCE DATA, MSFC TUT 578

MSFC 578 (SALGF) 142-IN SRB (139) NDE1

(R911J1) ( 01 NOV 73 )

	REFERENCE DATA	E DATA								PARAMETRIC DATA	DATA :	
												9
•	MI CO DEC	•	2 4004	5,5	5.5570 IN.					.00.	i i	
246		:			27 0000				FWOSTK =	. 955	AFTSTK =	.00.
LEEF	. 6559 IN.								ATHENG =	.199	ATHS =	.000
BREF #	. 6009 IN.	₽.	2HEP		. 2555 IN.					ייניט	SHDSTK :	. 900
פנערב =	.0556									:		
		ž	RUM NO.	0 /1	RN/L =	5.91 GR	GRADIENT INTERVAL = -5.00/ 5.00	tval = -5.0	00.5 100			
					į	į	đ	¥.	CYNH	GBL		
		MACH		ALPHA				2000	הפסח	01730		
		.599		179.010	.66599	-1.45160	-1.5635	neetn.	1000	04900		
		. 599	_	168.949	.67919	-1,79569	-1,61940	-, 53440	26892.	00060		
		.599		164.909	1,43775	-2.32479	-1,72859	04765	94649	00450		
		.599		159.930	2,15619	-2.53150	-1.87869	05620	15269	01680		•
		899		155,859	2,77525	-2,52709	-2.06020	-, 12195	-,33569	05580		
		599		151,759	3.53235	-2,66730	-2.24820	26419	-,59850	. 05616		
		90		149.825	4.56789	-3.01969	-2.32190	31955	72390	09990		
				159.930	2.57689	-2.52950	-1.87329	56149	16879	.01435		
			3	GRADIENT	16629	.96397	. 03932	.01417	.03893	50052		
		•	CN MIG	0 /2	RN/L =	6.34 66	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	90' \$.90			
		5							,	ę		
		MACH		ALPHA	Š	<b>E</b>	ð	E	Z.	ا 9		
		100		175.500	.74740	37100	-1.88590	. 02500	. 03120	. 33565		
			_	167.980	1,02939	-,73965	-1.99540	. 91459	02370	00180		
				62.870	1.63969	-1,45290	-2.12939	-, 04930	19869	. 55185		
				277	2.27449	-1.88039	-2.21230	06675	-,24210	.05320		
				20.00	T 07000	DC2C2 6-	-2.30430	12420	43550	.05490		
		8		200.001	006/n.c	14940	-2.42540	-,29089	44799	.09570		
		906		151.550	4.10119	0.040.	20000	15007	-,61690	91979		
		<b>9</b> 06.		149.340	4.00330	0.000.0	-2.22960	-, 09850	24196	-, 96920		
		2	3	COADIEM	19332	15909	.02777	.01929	. 62992	. 50022		
			5									
		_	SCN NO.	6/ 0	D RNAL =	6.72	GRADIENT INTERVAL = -5.00/ 5.00	:RVAL = -5.	00/ 5.00			
					3	3	đ	E C	CYN	ಕ		
					96.30	-4 EB520	-2.44915	92900	05100	. 50940		
		1.195	-		00100	-P 02270	-2.51830	.00580	04310	. 09700		
		1.195		770.791		75390	-2.59516	09729	15639	.09759		
		1.195		303-601	2000	1 64650	-2.62150	13959	32655	. 55219		
		1.195		159.410	£ . 03633		-	Cero	18140	. 95419		
		1.195		155.199	0.2067.	24530	2 41050	15070	24665	. 01550		
		1.195		150.769	9.92800	-4.16340	00000-3-		91914	50100		
		1.195		148.730	6.75580	-4.03510	-2.88629	13150	13639	יטעעטע		
		1.195		159.410	2.91869	-3.64265	-2.63349	-1336	0.00.0			
			Ţ	GRADIENT	27525	.12322	.61937	. 99816	91 093			

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SACF = LAEF = BACF = SCALE =

. 00000 . 00000 . 00000 . 00000 . 00000 . 00000 .10690 .05350 .05350 .0250 .02070 .12730 .02030 .02030 GRADIENT INTERVAL = -5.00/ 5.00 . 02050 . 03470 . 01380 . 0540 . 0540 . 05130 . 05130 6.96 GRADIENT INTERVAL = CA -2.52060 -2.53305 -2.65260 -2.67345 -2.74890 -2.81605 -2.81605 -2.66330 CLMM -1.26050 -1.46340 -1.67990 -1.57990 -1.5879 -.12590 6.99 . 02210 1.12360 2.96630 3.32740 4.69780 6.24560 7.04360 3.31469 NO. 75/ 5 ALPHA 169,850 167,830 163,649 159,369 159,369 159,770 148,759 159,369 66401ENT ALPHA 179.955 166.549 159.829 155.669 151.599 163.965 3 1.957 1.957 1.957 1.957 1.957 1.957 1.957

CBL .01120 .01290 .04240 .05080 .05090 .02650 CYNH .02250 .01580 .00320 -.02200 .00680 -.00990 .00560 -5.99/ 5.90 .00930 .00900 .00900 -.01970 -.00210 .00050 -.00350 GRADIENT INTERVAL = -2.41550 -2.4170 -2.51770 -2.62980 -2.77110 -2.82180 -2.53030 CLMH
-,39900
-,27720
-,09660
,16070
,39360
,55760
,00610 6.15 FEAT = CNM .6862D .9969D 1.75259 2.65819 3.69209 4.84769 5.51169 2.66679 -,23435 NO. 258/ 149.490 159.820 GRADIENT 3.479 3.479 3.479 3.479 3.479 3.479 3.479

CYNN .05480 .04040 .01870 .02280 .01160 .05530 .04800 .02959 CYM
-.06940
-.07160
-.06720
-.06850
-.0610
-.12170
-.12230
-.07296 -2.37769 -2.47309 -2.57909 -2.75639 -2.64490 -2.55509 CLMM -.29210 .03450 .35160 .54860 .65400 .07540 .07 .57120 .65769 1.54109 2.41220 3.41690 4.33980 5.21355 2.40179 159.129 169.389 6RADIENT ALPHA 170.490 168.540 164.470 165.370 156.250 152.149 4.000 4.000 4.000 4.000 4.000 4.000 4.000

こう インター はなるのでは、「経緯」で、日本のは、日本のでは、「はない」であった。

FACE 17	(R911K1) ( 81 NOV 73 )	PARAWETRIC DATA	.000 PHI = .000 .000 AFTSTK = .000 .100 ATHS = .000 1.000 SMOSTK = .000		Ę	.01640	0.000.0	.01676	01330	.00910	.00510	.01479	.01560	,00013		CBL	.00740	.05620	62110	. 55725	. 90865	.01340	20120	. 03255	.60016
		PAI	BETA = FLOSTK = ATHRNG = CONFIG =	00' 8'00	_	05826	. 03540	08880				06559	.01750	. 55454	00.2 /00	Crist	00810.							. 05940	. ၁၅၀ <b>၈</b>
				tval = -5.1	£	07350	06219	02770	05890	01540	51960	54395	91425	-, 05199	RVAL = -5.	Cra	06240	-, 94289	02640	92159	02150	03559	36750	02090	90543
1 TMT 578	MSFC 578 (SA10F) 142-IN SRB (139) NBE1			GRADIENT INTERVAL = -5.00/ 5.00	5	-2.37160	-2.3448C	-2.27560	-2.19610	-2.14670	-2.32975	-2.36155	-2.13815	90200*-	GRADIENT INTERVAL = -5.00/ 5.00	ಶ	-2.25230	-2.22355	-2.16259	-2.59560	-2.56510	-2.25950	.2119G	-2.04109	99257
DATA, MSFC	142-IN SR			6.17 GR	<b>M</b>	22540	99760	59746	12569	43249	42488	33550	56100	.91517	5.09 GR	¥	22440	11660	.0009	15140	33110	36630	37939	05899	.01451
TABULATED SOURCE DATA, MSFC TUT 578	578 (SA10F)	,	5.5570 IN. .0009 IN. .0009 IN.	S RWA =	3	73330	45850	11769	05739	.17149	.3452	.53793	06150.	05698	D RN/L =	Š	62270	-,45940	11430	.04650	.12695	.32200	.44885	93580	54848
TABULA	MSFC		H H H	RUN NO. 263/ D	AL PHA	191.960	169.120	185.080	161.960	177.019	173.010	171.070	161,569	GRADIENT	RUN NO. 262/ 6	At PHA	191.030	169.090	115.070	181.969	177.539	173.030	171.100	181.075	GRADIENT
		REFERENCE BATA	54. IN EAR IN. 166P	<b>1</b> 28	MACM	4.099	4.999	000.▼	4.059	1000	4.995	4.000	4.000		25	7047	4.450	4.450	4.450	4.450	4.450	4.450	4.459	4.459	
106 74		ROTER	8 0208. 1 0008. 1 0008.																						
DATE 19 AUG PA			2010 X 10 10 10 10 10 10 10 10 10 10 10 10 10																						

4.14 GRADIENT INTERVAL = -5.00/ 5.00 RN/L = RUN NO. 261/ 0

CBL .01100 .00700 .00700 .00800 .04650 .04550 .01840 .04910 .04910 .05960 .05960 .04751 .04810 -.04890 CTM
- 02600
- 02890
- 02890
- 02040
- 02140
- 02140
- 021600
- 010900
- 010900
- 010900 CA -2.35720 -2.25720 -2.25720 -2.25720 -2.25619 -2.35700 -2.18050 -2.18050 -2.00142 -2950 -11090 -0620 -16400 -29650 -29650 -39700 -19730 CNA --64060 --37990 --11890 --04770 --12220 --14240 --54874 ALPHA 191.010 199.000 195.070 191.060 177.030 177.030 177.030 177.030 

			À									
	REFERENCE	ENCE DATA						•	PARANETRIC DATA	DATA		
3866	. 5555 St. 1N	IN XMRF		5.5578 IN.				BETA :	966.	PHI =	•	. 858
רמנג ב	.8959 IN.		14	. 5555 IN.					199			.090
Batt z	. 6999 IN.	2467		. 8555 TN.					1.555	SHOSTK =		.000
SCALE #	.9556							<u>.</u>				
		RUR NO.	NO. 252/ 0	O RMAL =	6.69 CEA	GRADIENT INTERVAL =		-5.00/ 5.00				
			***	į	3	5	E.S	CYMM	ಕ			
				14.55466	15.12210	.92340	27840	49229	.01620			
			27.600	14.72580	15.31720	01928.	29310	59863	.01849			
			56.720	15,70499	16.31479	.75120	36759	3446!	.00460			
			69.745	16,57350	16.72900	64049.	-,33419	44119	. 03250			
		400	64.745	17,47759	16.14670	.71279	20030	-,26650	24645			
			68.709	98.38980	15,21169	.65656	29760	27929	. 95419			
			70.569	18.55709	14.65780	.65649	27339	27965	26820.			
		100	65,735	16.49445	16.39349	.64555	-,33965	45619	. 62130			
			GRACIENT	.22731	91668	01296	.09992	.61195	, 505 <b>64</b>			
									,			
			¥	C 578 (SA10)	MSFC 578 (SA10F) 142-IN SRB (139) NDE1	139) NDE1			(K911F2)		( 22 FEB 74	-
								_	PARAMETRIC DATA	DATA		
	MEP ENELSE.	ERCE UNIA							į			5
	4650 %		**	5.5570 IN.					8 8			9 5
				.0000 IN.					000	ď		25
			63	.9000 IN.								
SCALE :	. 0096							= 91 -NO3	1.020	STORE		
		2	RUN ND. 220/ 0	O RNAL =	6.73 GR	GRADIENT INTERVAL =		-5.00/ 5.00				
			7.	į	<b>3</b>	3	£	Cyren	ಕ			
				14.31740	11.09700	48310	-,36790	-,11336	.01610			
				10.39570	10,75830	.49070	34199	19540	.02120.			
			24.	19.65700	10.03199	39480	35510	05410	.01280			
			000	19.80830	8.63270	27815	34830	-, 09030	.01250			
			24.760	19,91439	8.57449	.11199	32649	. 93170	. 91450			
			94.279	19,93499	7.76195	04300	31659	. 02859	. 52490			
			100-150	19.74760	7,29145	17740	32790	.05740	. 62619			
			90.280	19.77520	8.61639	.27769	34839	51225	.01599			
			CEADIENT	12720.	19608	93473	.00256	.01061	.0003			

CATE 19 AUG 74	74		TABUL	TABULATED SOURCE DATA,		MSFC TWT ST8				PAGE	<u>5</u>
			MSF(	MSFC 578 (SAISF) 142-IN SRB (139) NBE2	142-IN SEB	(139) NBE2			(R912B1)	11) ( B1 NOV 73	۳. د .
	REFERENCE DATA	DATA							PARAMETRIC DATA	DATA	
			,	4 4470 IN				BETA =	. 000	= IMd	000
SREF ::	. 5930 Se	NI XHKT	, ,,	.0555 IN.				FWDSTK =	. 590	¥	000
ור אינו אינו אינו אינו אינו אינו אינו אינו		ZHEP	11	.0559 IN.					1.00	ATHS =	080.
SCALE =								CONFIG =	2.009	SHDSTR =	a .
		25	RUN NO. 52/ 5	9 RN/L =	4.92 GR	GRADIENT INTERVAL =		-5.00/ 5.90			
		20	AH PHA	¥.	₩ U	ಶ	CYH	CYNM	ទ		
		597	066.6	.92950	79230	1.01580	.01430	. 16691	. 00000		
		597	11.930	1.15495	1,12260	1.03600	.07820	01759	. 00000		
		.597	15.970	1,65820	1,65535	1.04529	.36330	53770	. 59556		
		.597	25,945	2,22789	2.79595	1.02770	.75080	-1.17580	. 99599		
		.597	24.149	2.91299	3,99110	.97030	1.09580	-1.55968	00000.		
		.597	28,259	3.63905	5.23885	.91380	1,18980	-1.12700	00000		
		.597	39.189	4.52799	5,77450	.95695	1,26640	-,56990	00000		
		597	25.049	2,27169	2,62400	1.02660	.79770	-1.24120			
			GRADIENT	.15303	.25018	55655	.06667	-, 05292	.00000		
		35	RUN NO. 51/ 0	O RN/L =	6.23 GR	GRADIENT INTERVAL =		-5.00/ 5.50			
		į	410	7	3 C	đ	Š	CYNM	ਚ		
			200	113810	34640	1.21000	-, 95656	.10860	.00000		
		906	630.61	1 20820	SARGE	1.22230	09600	. 04 920	.09999		
		9 9	10:31	1 87550	1.48859	1.22546	00470	06840	00000		
		900	201.01	2.58348	2.83230	1.19990	.12490	22410	. 55559		
		956	24.440	F. 500.40	4 78850	1.13129	.35480	-,56650	.00000		
		906.	24.473	0.010.0	10000	1 76110	38450	39990	. 05550		
		956	10.07 10.07	4.62630	A. 61440	1.05050	.41850	.07710	.09099		
		9 6	20.00	2.52820	2.75999	1.17850	.09700	24050	. 09000		٠
		,	GRADIENT	.18243	.39554	00868	.02365	01547	.00990		
		25	RUN NO. 50/	O RN/L =	6.62 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
			410.4	3	3	3	Š	CYNM	G G		
		1344 -	20 CF	1.08880	1.01450	1.72180	. 02560	08610	00000		
		1.195	12.120	1,33310	1.57300	1.74560	.07490	01641	. 99399		
		1.195	16.299	1.96100	3,13255	1,75850	.20440	35980	. 00000		
		1.195	20,550	2.66810	5.17210	1.79460	.22340	-,34410	. 00000		
		1.195	24.900	4.07360	7,38790	1.61980	19570	22250	.00000		
		1.195	29.250	5.56900	9.40560	1.54259	.24540	.01630	.00000		
		1.195	31,349	6.39640	10,38890	1,53620	.17419	.46740	. 05050		
		1.195	20.570	2.99750	5,33959	1,71169	.22380	26679	. 96569		
			COADIENT	24880	.45178	61951	.09717	. 02511	. 66599		
				1							

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## MSFC 578 (SA10F) 142-IN SRB (139) NBE2

(R91281) ( 01 NOV 73 )

PARAMETRIC DATA	000 PHI =000 AFTSTK =100 ATHS =2.000 SHDSTK = .
	BETA = FWDSTK = ATHRNG = CONFIG =
	5,5570 IN. .0005 IN.
REFERENCE CATA	.9555 SQ. IN XMRP = .8505 IN. YMRP = .8505 IN. ZMRP = .0556
	SREF = LREF = BREF = SCALE =

000° 000° 000°

5.00
-5.05/
INTERVAL =
GRADIENT
6.99
RN/L =
0 /96
RUN NO.

COM 1.11050 1.46700 2.47560 3.79620 5.86940 7.66970 3.79200 3.79240 1.31440 1.31440 1.75080 2.70240 2.70240	
	8.510 0.820 1.550 1.550 0.810 0.150 6.210 0.520 0.660

12 14	68 74 3		000.	000	660.	ono.																																	
PAGE	1) ( 22 FEB 74	DATA		_		SHUSTR =																																	
	(R912D1)	PARAMETRIC DATA	. 000	. 909	199	2,555		ਝੁੰ	. 04930	.04250	.03680	.94150	. 95369	.03470	00000	. 03229	.00973		GBL	.62490	.04280	.02640	.02740	.04060	.02090	. 02180	.01280	-, 09942		<b>.</b>	. 02510	.02110	. 99740	. 53835	.02860	. 52845	. 51129	. 02320	. 00002
		٠	BETA =	FWDSTK =	ATHENG =	CONFIG =	10/ 5.90	CYN	-1.64930	-3.90749	-2.88650	-1.83980	.11370	-1,35485	92190	-1.92720	.09173	-5.00/ 5.00	CYN	19790	22620	.51520	93520	05170	. 07629	15950	01170	.00185	-5.00/ 5.00	CYNM	49519	50130	32380	41149	26925	25159	15320	-,37690	.01432
							VAL = -5.00/	Ç	68340	-,30560	15950	06040	.12350	20819	14800	15370	. 02020		Š	01860	.12420	.25050	18499	14300	21640	22740	15500	01785		CYM	29130	31009	37210	-,33149	27790	31440	-,29960	32699	. 00072
MSFC TUT 578	(139) NBE2						GRADIENT INTERVAL =	5	.41089	.31610	.11520	02680	19709	-,29435	2996ű	02920	03680	GRADIENT INTERVAL =	5	.51648	44640	.29620	.18629	1.19976	.67590	.11460	.17169	02163	GRADIENT INTERVAL =	<b>ರ</b>	1.04860	93590	.82669	.79760	.61270	.82129	74689	79410	01113
DATA, MSFC	142-IN SRB						4.98 GE	¥	10,45350	11.59910	12.86710	14,39799	14.56930	14.37670	14.64375	14.28765	.19712	6.3g GR	2	16.85510	18,15800	19.86070	20.71820	29,95369	18.02580	17,15010	20,57750	.95697	6.68	<b>X</b>	14.74240	14.92160	15.95590	16,33880	16.97170	14.99420	14.43270	16,22299	00524
TABULATED SOURCE DATA,	MSFC 578 (SA10F) 142-IN SRB		5,5570 IN.	.0000 IN.	.0000 IN.		G RN/L =	3	7.39490	8.28725	9.58510	10.90380	11,64030	11,77850	11.91269	15,87729	.22619	D RN/L =	37	11 55200	12,22760	13.24450	14.27510	14.84949	14,93390	14.96915	14,17429	.17159	O RN/L =	N	14.09600	14,77669	15,88390	16.71310	17.61160	10 48000	18.61845	16.64520	.22813
TABUL	MSF(		•				NO. 215/ S	77077	50.325	52.245	56,279	60,300	64.320	68.320	79.229	69,399	GRADIENT	RUN NO. 214/ 0	410.14		82 640	Se 700	50.749	64.730	68.669	79,538	69.730	GRADIENT	RUN NO. 253/	AH PHA	50.760	12.660	46.710	מויי הא	64 740	69 700	20 670	A1 720	GRADIENT
		REFERENCE DATA	dough was the		į <u>z</u>		RUN NO.	7	10 % 10 %	101	865.	593	593	. 593	593	.593		RUN	7	HACH	206.	300	206.	200	206	206	206		2	7547	- + 00	661.1		667.	661-1	667.1	1.199	661.1	661*1
CATE 19 AUG 74		3		<b>.</b>	17 5	SCALE = .0056																																	

(R91201) ( 22 FEB 74 )

PARAMETRIC DATA	BETA : .000 PHI : FWESTK : .000 AFTSTK : ATHRNG : .100 ATHS : COMFIG : 2.000 SHDSTK :	RUN NO. 132/ 0 RN/L = 7.21 GRADIENT INTERVAL = -5.00/ 5.00
		7.21 GRADIENT INT
	5,5570 IN. .0000 IN.	132/ 0 RN/L =
REFERENCE BATA	. 5039 52. IN XMRP = . 6055 IN. YMRP = 6055 IN. ZMRP =	RUN NO.
	SAEF = LREF = BAEF = SCALE =	

000.

7	AH PHA	CNM	¥	ర	Ä	CYNM	ខ
8 6	40 460	13.49876	8.99800	1,39470	29190	-,12560	01060
	52.470	14.94299	9,25690	1,36890	29750	-,19349	00075
	56.520	15,32300	19.91569	1,34420	33160	14850	99119
	60.530	16.28650	10,09790	1,29699	33359	15576	91150
978	64.570	17,23265	19,56649	1,20199	33570	16189	00650
976	68.625	18.37389	11,48220	1,12030	33860	-,15849	01010
976	20 400	18.46430	11,19350	1,54999	-,31629	-,11510	96559
970	AG 495	16,53580	9,54620	1,28360	30490	06060	01970
	GRADIENT	.25492	.11759	91664	-,09164	60109	00013

2	NO. 90/	G RN/L =	9.62	FRADIENI INIE	THIERAN - 7.	30.0	
H) H)	A1 PHA		£		C	CYNM	ฮี
77.0	59.349		6.56390		28810	-,18330	-, 9233
7	R2 260		6,63270		28820	-,18819	-, 0139
7.70	56.250		7,63960		29240	-,23299	0158
7.70	601.08		8,60300		28190	-,22549	51879
470	64.350		9.34825		27520	23790	0154
644	Se 370		9,89555		25585	23000	6529
4.40	70.270		9,95835		24869	-,24549	-, 0068
470	60.300		8.63479		28589	23780	-, 0256
;	COACIENT	.23956	19924	02136	. 55212	60257	.0007

ž.		0000.
(R912F1) ( 01 NOV 75	PARAMETRIC DATA	D PHI :: O AFTSTK :: O SHOSTK ::
(R9)	PARAMETI	BETA = .000 FWDSTK = .005 ATHENG = .105 CONFIG = 2.009
MSFC 578(SA15F) 142-IN SRB (139) NBE2		5,557G [N. .0555 IN. .0555 IN.
	REFERENCE DATA	SREF = .5030 SQ. IN XMRP = LREF = .8509 IN. YMRP = BREF = .8509 IN. ZMRP = SCALE = .5056

25	RUN NO. 2	223/ 0	RN/L =	5.04	GRADIENI INIERVAL = -5.05	KVAL3.5		
				3	5	Cyth	CYNM	<b>ಕ</b>
	ב ב		Ę		01000	01770	19020	.0733
	80.2		11,77280	19.65680	000/2			
			07174	0 24535	35620	.14020	. 89825	.0414
	36.1		77.14.45	1		0.000	61300	0633
	A6. f		12,13249	6.68100	.42170	.19953		
			012EC C1	15030	.53046	.12675	57910	.9707
	5.60		16.63.10			00780	01510	9679
	6.50		12,16749	2,68225	.47129	. 27403		
			00077 07	OTTE !	07576	.54319	. 96389	. 5425
	97.5		15.14303	10000			CORRO	0457
	90		12,16820	.30125	.07495	00000		
			02377	ש ההמהח	52949	.13820	-, 94719	. 1940
	60		16.14333			00710	30070	ם מנוטפ
	GOACIE		. 52557	51556	05/65	00100	25050	

2	I NO. 224/ 0	O RN/L=	6.38 GR	GRADIENT INTE	INTERVAL = -5.1	-5.00/ 5.00	
1			3	5	X.	CYNM	G
HACH	ALPHA		10 26104	.56150	-,28550	21890	.0634
668	89.420		19707	55020	25270	-,15720	.0748
688	82.290		0 96450	53019	22040	02439	. 0299
668	86.210		6.27460	.58680	-,23900	-, 00550	.02030
668	90.120		10030	46810	-,26600	.07480	.0211
669.	94.070		05890	.31609	-,28339	.28440	.0137
668	28.000		82545	.21730	-,24890	.22380	.0192
669	60.66		A 31980	.58160	-,22819	.00150	.0238
669.	99,120	46010	58845	91583	05019	. 02378	0027

•	170		3	5	CYN	CYNM	Ę
MACH	ALT14			60430	10240		.01400
1.195	80.480	_	11.01240	00430	30760		CECCO
	#2 47B	•	10.62749	.59290	35849	98240	.0220.
1.135	9		0 84890	06627	34269	.05340	00600.
1.195	86.340		3.0470	33080	34190	.05740	.09610
1.195	90.270		7 01880	14210	-,31500	. 08900	.02510
1.195	94.270	•	7 56220	07720	31530	. 07060	.62510
1.195	96.269		7.59350	17950	-,31900	.07450	. 69920
1.195	100.140		8.45610	.33110	34460	. 05960	,01010
1.195	GEADIENT	. 02822	-,19863	94151	. 99334	.05801	. 6991

## MSFC 578 (SAIGF) 142-IN SRB (139) NBE2

(R912F1) ( 01 NOV 73 )

	000.
DATA	PHI = AFTSTK = ATHS = SHCSTK =
PARAMETRIC DATA	.000 .000 .100 2.000
	BETA = FWDSTK = ATHRNG = CONFIG =
	5.5570 IN. .0000 IN.
	18.00 M. 18.
CE BATA	X - X
REFERENCE DATA	.5939 50. IN XMRP .0959 IN. YMRP .0555 IN. ZMRP
	SREF = 1REF = 5REF = 5CALE =

5.00
-5.00/
11
INTERVAL
GRADIENT
7.16
RN/L =
129/ 0
RUM NO.

1.951 60.540 19.57990 10.51590 .71060402001249003370 1.951 62.410 19.71700 10.22790 .62670394101187003370 1.951 96.380 19.88750 9.50320 .450203954101003003810 1.951 96.380 19.88750 9.50320 .450203954101003003810 1.951 96.380 19.88750 9.748450 .2795700776100977004200 1.951 96.355 19.88670 6.0539010440357600859003330 1.951 100.170 19.55820 7.2382010440327800859003330 1.951 90.345 19.885201875020420312009141004400 1.951 90.345 19.88530 8.75350 .27610370509141004140 1.951 90.345 19.885801875604621 .00450 .90218 .90014	_	ALPMA	<b>E</b>	ర	CYN	HALL O	ב ב
62.410 19.71700 10.22790 .626703941011870 86.380 19.88750 9.50320 .450203953010030 91.340 19.88750 9.50320 .279503761009320 94.335 19.84500 6.00390 .096503537009770 96.295 19.58620 7.23820104403278008590 100.170 19.35380 6.84550204203720007470 90.340 19.83350 8.75350 .276103700008110 90.340 19.83350 8.7535004621 .00450 .00218	. 2	62 540	19,51599	.71969	40200	-, 12490	-, 93370
96.360 19.88750 9.59320 .450203953015030 90.345 19.89860 8.74645 .2795035761009320 94.335 19.8450 6.05390 .096303537009770 94.335 19.8620 7.23820104403278008590 100.170 19.35380 6.84550204203278007470 90.340 19.8335 8.75350 .276153700008110 90.340 19.8335 8.7535004621 .00459 .00218	: :	2 4 6 6	10.22790	.6267	-,39410	11870	-, 03 960
90.340 19.9380 8.4840 .279503761009320 94.330 19.84600 8.00390 .096303537009770 96.290 19.58620 7.23820104403278008590 100.170 19.35360 6.84550204203120007470 90.340 19.83350 8.75350 .276103700008110 90.340 19.83350 8.7535004621 .00450 .00218	: :		9.50320	.45020	39530	-,15030	-, 93816
94.359 19.84100 6.00390 .096303537009770 96.359 19.84100 6.00390104403278008590 19.83350 6.84550204203120007470 90.340 19.83350 8.75350 .276103700008110 90.340 19.83350 8.7535004621 .00450 .00218		90.00	8.74849	27950	37610	09329	0439
90.340 19.8620 7.23620104403276008590 100.170 19.35300 6.84550204203120007470 90.340 19.83330 8.75350 .276103700008110 6.8450104621 .00450 .00218	7 1	10 to	8. 95395	.09630	-,35379	09779	0425
100.170 19.35389 6.84550204203120007470 90.340 19.83330 8.75350 .276103700008110 6RADIENT009851875604621 .00450 .00218	į,	000.40	7.23829	-,10449	32780	08590	-, 0333(
90,340 19,83330 8,75350 ,27610 -,37000 -,08110 GRADIENT -,00985 -,18756 -,04621 ,00450 ,00218	7	563.86	K 84550	20425	-,31200	-, 97479	-, 0245
50.545 15.65551875604621 .00450 .00218	<b>.</b>	200-170	A 75350	27619	-,37999	58119	-, 0414
	5	GRADIENT	18756	04621	.06450	. 55218	1000.

					;		é
3	ALI DUA	3	Ĭ	ฮ	£		5
F	ALT. 113		0 97060	78250	37160	-,26759	91710
479	60.320	16.00.01			2440	25130	02030
.479	82.230	18.78050	9.68050	. 11 262		2010	20770
-	2000	18.99750	9.25760	.54990	33700	21179	01360
ָרָ נְי		10 10580	8.58090	.36630	-,32910	19660	01680
	01.06	0 CO CO	7.76910	.16590	-,28910	-,16805	01690
643	24.175	19.030.01	7 19541	54285	28270	-,17320	-, 02510
.479	001.00	10.00350	A 45760	-, 12830	27340	14210	01419
5.479	100.00	10.000	8.59130	.36550	32420	20910	02219
£.	GRADIENT	.00178	-,15924	04683	.00499	.00576	60004

( 01 HOV 73 )

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(R912H1) ( 01 MG	PARAMETRIC DATA	BETA = .000 PHI = . P.OSTK = .000 AFTSTK = ATHRNG = .100 ATHS = . CONSTG = 2.000 . SHOSTK =
MSFC 578 (SAIGF) 142-IN SRB (139) NBE2	REFERENCE DATA	SREF = .5939 SQ. IN XMRP = 5.5570 IN. LREF = .6950 IN. YMRP = .0999 IN. SREF = .6950 IN. ZMRP = .0999 IN. CC

25	NO. 156/ B	. S RN/L =	5.02 GR	GRADIENT INTERVAL =	KAAL = -3.00/	700	
į	420		3	5	C	Z S	Ę
MACH	AL			20 04440	00267	2.24550	.0163
165	129.690		-0.0000				
	127 085		-6.75650	-1.93760	14979	3.59445	210.
			R DETEN	1,70930	.55350	2.85810	. 5441
.597	123.960		7.000			00001	1004
K07	119,960		-6.05429	-1.39150	.61360	1 . 100 30	
			-5.16240	-1.05079	.87925	1.76420	. 020
- 25C •	113.300				00000	1 44680	č
497	111,966		-4.35545	75659	.0100	7	1
	040		-3.45620	65499	.95770	. 86450	. 015
.097	110.011				COBOO	14745	002
597	119.985		-5.59619	-1.49319	0000	2011	
	COARTENT		14462	07366	03672	.08758	

3	RUN NO. 157/	157/ U RN/L =		OKABICA: INICAME - COOK			
7	A1 DWA		¥ 10		E.C	CYN	Ą
	ACT 000	•	7. 53490		.33460	.01980	03220
306	169.060		70000		39600	-,11390	02250
-902	127.690		20001		10460	DERRO	00430
.902	123.650	-	-6.10840		20400		
600	119,650		-7.58970		.37940	17830	01080
	019 311		-7.15600		.26960	. 09019	.01110
306.	113.00				11700	22990	.00669
-902	111.659		-0.11130			2400	01150
206	109.770		-5.34789		.27320	1991	0000
200	119.650		-7.52850		.37820	-, 12120	02240
	COAPTENT	21289	-, 15893	08428	.00442	D1648	00203

Ş							
	41.014		3	5	CYH	CYNH	된
HACE	46.14			00000	22300	15830	.028
1.196	129.680	•	-1.40330	10201-7-			
			-1.00790	-2.04950	.23510	16240	. 029
1.130	151.0						200
70.	124 76A		56320	-1.71259	.24490	14673	970.
1.130					22100	15650	. 932
1.196	119.740		41029	-1.41610			
	224 211		. 56779	-1.11890	.18589	.01729	· ulk
1.190	113.430				2200	00500	100
1.106	111.750		1.64890	77779	13636		
			0 1712A	- K1740	18859	. 03630	. 021
1.196	109.87						Č
***	110 750		15190	-1.47965	.23439	-, 18860	77.
1.130			, , ,		20000	0110	ב
	COADTENT		17348	97815	.0200	70 7 70 0	

(R912H1) ( 01 NOV 73 )

	<b>30</b> F.V.
	233
1	SKO
	N1-271
ļ	578 (SA19F)
	HEFT 57
	Z

	960° 960°
DATA	PNI = AFTSTK = ATHS = SHDSTK =
PARAMETRIC	.050 .005 .100 <b>2.</b> 005
•	BETA = Fubstk = ATHRNG = CONFIG =
	3.5570 IN. .0000 IN. .0000 IN.
_	XMRP :: YMRP :: ZMRP ::
REFERENCE DATA	.5539 Se. IN .6559 IN. .6259 IN.
	SAEF :: LREF :: BAEF :: SCALE ::

5.90
-5.00/
11
INTERVAL
GRADIENT
7.17
RN/L =
151/0
RUN NO.

7777	AN DWA	300	<b>1</b>	5	£	CLE	<b>5</b>	
MACH		02772 61	1 64670	2,11090	.27870	.04580	.01910	
1.945	129.70	10.000	00110	-2 01760	29210	.04120	. 02540	
1.945	127.695	00066.71	1 54900	-1 77720	35485	.10169	.02670	
1.945	123.900	14.63.00	1 98450	-1.42430	33900	.05240	.01490	
1.945	0.0.611	00004.61	1.0000 x	1.07950	.32120	.11545	. 55685	
1.945	110.030	10.0000	3.83420	77139	.32780	.12749	. 50419	
1.945	650 000	17 e2750	4.41250	62979	.32640	.13170	.01485	
1.945	משפיההו	15.20210	3.64285	1.39760	.31280	. 09350	.91716	
7.1	CRADIENT	28118	12482	97697	00239	00460	. 55582	

# RUN NO. 109/ 0 KN/L = 7.99 GRADIENT INTERVAL = -5.00/ 5.05

3.479		2		5	E		
	270	*** ***	2 16910	-2.22550	.28530	.05560	.02869
	24.82	11.4400	2 45046	-2.19969	.29540	.05340	.03520
	210.02	12.07190	2.80470	-1.74559	.26140	.12590	. 53689
	020.00	13.55.40	3.48680	-1.36490	.26300	.17450	51869
	010.021	15 46110	3,96500	-1.93139	,25850	.11750	.03840
	0.60.611	16 38970	4.51660	-,75989	.22610	.05900	. 53260
	Dec 111	16. 826AG	4.89869	56340	.28690	. 03060	.03340
	20.00	14.33890	3.47649	-1.36360	.25830	. 19655	. 04500
•	RADIENT	27585	13452	08529	.05157	00198	•00000 •-

		MSFC	378 (SA19F)	142-IN SR	MSFC 378 (SAIDF) 142-IN SRB (139) NBER			(R912J1)	1) ( 61 NOV 73	r .
REFERE	REFERENCE DATA							PARAMETRIC DATA	DATA	
	2000	ı	4. 4576 TN.				BETA =	. 999		.000
555.	IN. THEP		.9999 IN.					000.	<b>¥</b>	600.
		11	. 9555 IN.				ATHRNG =	2.000	SHDSTK =	. 000
	RUN NO.	NO. 9/ 5	RNAL =	5.91 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
	1	77.0.77	3	3	<b>ઇ</b>	Z,	CYNH	9		
	MACH	יאט טאט	66929	-1.05730	-1.68300	00330	.01160	. 55859		
	666.	168,969	83978	-1,42989	-1.79348	.01410.	54120	.01270		
		164.030	1.37560	-1.92235	-1.94970	04120	08180	. 59595		
	60	159.950	1.99309	-2,12519	-2,12120	06140	17170	.09970		
	60 8	155.879	2,65910	-2,15579	-2.34279	12239	-, 32330	.01859		
	667	151 785	3.54790	-2.50935	-2.53799	-,25669	42899	-, 05565		
	666.	140 845	4.05485	-2,67500	-2,57955	32299	53520	.01310		
	666.	140 PKG	1.95670	-2,96985	-2,11385	56650	18799	.00980		
	660	GRADIENT	16664	.07598	.04532	.01557	. 52613	. 00903		
	3	RUN NO. 16/ 0	B RN/L =	Fr. 6	פאינו זייוראזייר			į		
	MACH	ALPHA	Ş	₹	ರ	ž	E	ָרָ פּרָ		
	506	170.010	.69570	01550	-2.09000	. 52170	. 52890	05260		
	906	166.500	.97239	35220	-2.18059	. 55729	01250	01470		
	006	163.910	1.58320	-1.12759	-2,27519	03269	09630	01309		
	006	159.750	2,27750	-1.74370	-2,44140	11160	17880	50435		
	006	155,569	3.06690	-2,36310	-2.57160	11870	26350	00500		
	000	151,390	4.96299	-3,12970	-2.74630	31460	29370	99189		
		149.395	4.66569	-3.71255	-2,75259	35030	29860	01239		
	506	159.755	2.27429	-1,73829	-2,44560	19779	-,15795	01039		
		GRADIENT	16685	.17198	. 03322	.01784	.01663	00511		
	2	RUN NO. 11/ 0	O RN/L =	6.68	GRADIENT INTERVAL =	RVAL = -5.	-5.00/ 5.00			
	777	At DMA	3	3	ಶ	Z.	CYN	G		
	100 a	160.050	98495	-1.60940	-2,73170	02920	05900	00240		
		167.810	1.24440	-1.98409	-2.82110	03050	06470	99470		
		167 670	1.92799	-2.71250	-2.87240	06969	15520	. 90160		
	604.	159.420	2.90570	-3,45790	-2.94270	17200	21340	. 09999		
	1.200	155,110	4.22520	-4.09605	-3.65120	16440	21640	.00270		
	1.200	150,000	5.96139	-3.66185	-3.19690	-,11910	35860	. 00240		
	1.200	148.770	6.56020	-4.21439	-3.17690	06210	11160	.00376		
	1.299	159.420	2.91565	-3.46819	-2,95560	29043	19170	00350		

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# TABLEATED SOURCE DATA, MSFC TWT 578

MSFC 578(SA1SF) 142-IN SRB (139) NBE2

(R91211) ( D1 NOV 73 )

.5550 SQ.										
.0036	IN THEF	W 11 (1	5.5570 IN. .0000 IN. .0009 IN.				BETA = Fubstk = ATHRNG = CONFIG =	. 000 . 000 . 100 8 . 000	PHI = AFTSTK = ATHS = SHDSTK =	000.
	5	RUN NO. 69/ 5	BN/L =	6.96	GRADIENT INTERVAL =	RVAL = -5.	-5.00/ 5.00			
	777	VPG IV	3	3	ð	CYK	CYNH	Ę		
		160.050	81449	-1.23770	٣	01419	. 09480	. 55550		
		167.050	1.11250	-1.47329		. 99350	-, 95669	.05999		
	986	163.640	2.07460	-1.83630	-2.89799	.01619	. 96760	. 00000		
	966	159.350	5.33135	-1,79919		.05038	03039	. 35059		
		155.040	4.67149	-1,16869		91859	-, 19219	. 65000		
	***	150.810	6,10670	68927		09910	. 89495	.00955		
		148.899	6.75429	39519		93150	.97725	. 99599		
		159.340	3,31680	-1.51529		61225	51845	. 95599		
		GRADIENT	26499	05357		.05119	. 55512	. 05000		
	5	1 NO. 72/ B	, B RN/L =	7.91 6	GRADIENT INTERVAL = -5.00/ 5.60	RVAL = -5.	00' 8'00			
	2	ALI DAIA	3	4	5	CyN	CYNH	Ð		
		170 000	67340	43750	7	00549	.02770	.00500		
		146.020	97559	26570		. 99369	.01119	. 95599		
		161 060		0.09679		01739	. 02020	. 99999		
		150 620		19120		00979	. 94655	. 00399		
		155.670	3,65450	51729	-3.03800	. 09525	.01750	.00000		
		151.500		.67270		. 95499	.01479	. 55555		
		015.071		.25530		00059.	.04140	. 99595		
		149.850		.22525		07645	. 02650	.05559		
						***	*****			

TABLEATED SOURCE DATA, MSFC TWT 578

DATE 19 AUG 74

MSFC STRISALDF) 142-IN SAB (139) NBEZ (NO GRIT)

(R91202) ( 22 FEB 74 )

PAGE 29

PHI = AFTSTK = ATHS = SHÜSTK = PARAMETRIC DATA .000 .000 .100 BETA = FADSTK = ATHRNG = CONFIG = 5.5570 IN. .0000 IN. TAKE REFERENCE DATA . \$535 58. IN . \$555 IN. . \$555 IN. SEEF : BREF : SCALE :

RUM NO. 213/ 0 RN/L = 6.68 GRADIENT INTERVAL = -5.00/ 5.00

CBL .01360 .01360 .01500 .01500 .01500 .01170
- 01100 - 02100 - 02100 - 02100 - 02100 - 02100 - 07720 - 07720 - 02120 - 02139
29940 22940 32060 22460 27490 29010 31260
CLMM 13.53710 13.92060 14.97659 15.9460 15.9460 15.0679 14.10599 14.10599 14.10599 14.10599 14.10599 14.10599 14.10599
CAM 13,71140 11 18,85970 11 18,66900 11 16,66740 11 17,39960 11 18,2960 11 18,55140 11 18,55760 11
59.700 1 56.670 1 56.710 1 69.710 1 66.720 1 70.560 1 60.740 1
1.199 1.199 1.199 1.199 1.199 1.199

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i.

# MSC 578(SA19F) 142-IN SEB (139) NBE3

(R91381) ( 01 NOV 73 )

	9	909.	20.	. 255	. 999																																							
14		11	!! <b>!</b> *	ATHS =	SHOSTK *	ı																																						
PARAWETRIC DATA		_		.159 A1	-				<del>J</del>	. 69099	90000	00000	50000	. 2000	. 05535	60000	. 00000	. 09590	.05550		ಕ	00000.	.00000	. 09999	. 09959	ייייייייייייייייייייייייייייייייייייייי		00000		. 20000	. 95599		ŧ	00000	nonn.	. 11111	. 55555	. 95998	.00000	. 90556	. 95555	. 20093	00000	3 3 3
•			FLOSTK =	ATHENC :	CONFIG		-5.667 5.06		Crim	.15119	05625		7.48040	-1.17140	-1.55480	-1.03230	52259	-1.16970	05214	-5.00/ 5.00	CYNH	.16490	. 98529	-, 05650	26890	00000	5040	0 CO 72"-	62512.	25135	61331	-5.00/ 5.55	3		2860.	08290	-,36699	31625	22420	15525	.51569	39149		2010.
									ž	02250	06110		.36430	. 73449	1.06390	1.12570	1.16710	73769	.06253		CYN	09830	92689	30020	49650	55.45	. 18199	.54625	. 53910	.34695	.53121		3	E :	. 02250	.50019	.24959	.24660	19475	02704	18495	24276	2000	.000
							* Ifine Transferred		5	17120		1.10130	1.17829	1.16639	1.11290	1.03040	1.02629	1.16290	00784	GRADIENT INTERVAL =	5	1.39460	1.46230	05785	25400	1.55499	1.29570	1.19485	1,17419	1.35145	01131	GRADIENT INTERVAL =	ð	5	1.93955	1.95490	1.96590	1.90500	1.76550	71860	06364		0010P-1	51279
								F.33	2	28.80		. 24119	1.59745	2.56549	3.777.00	5,53760	4 51010	P4480	25159	H9 52'9	Į.	.12250	49770	6969		2.47749	4.35900	6.74569	7.84639	2.53590	.37922	6.63 64	į	Ĭ	. 60300	1.33690	2.89279	4.96359	7.02545	6466.	2011.6		4.37763	.44891
		S. 5576 IN.	AAAA TW.		. Dogs IN.				į		2000	1.19290	1.69649	2,29859	2.95120	3.64369	OFRAU V	-	66113.3	O RNAL =	3	1.00040		1.36640	1.33000	2.63360	3.49619	4.32619	4.91329	2.64360	16291	# 1/NA #		3	1.14730	1.40669	2.01729	9 44460	96777		99159°C	0.43600	2.95220	27775
				•	μ			#G# 150. 477 0				11.930	15.970	29.045	24.145	20.00		20.170	20.03	RUN ND. 40; 0	440.4			000-21	20.01	20.259	24.460	26.690	30,710	20.250	<b>GRADIENT</b>	0 /67 CO Mile		A PE	10.040	12.110	16.280		00.03	20.02	29.62	626.16	20.559	CAARTEMY
CF DATA		7	•		I. ZWEP			5			.59	. 591	.598	•				***	765.	2	7		30.	206	Ķ	. 902	-902	306	-922	206		•	•	FEE	1.195	105		201	1.193	1.199	1.195	1.195	1.195	
			- De cene.	. #555 IM.	.8559 IN.	.9956																																						
		;	3467 2	1	138EF ==	SCALE =																																						

	(R91381) ( 81 NOV 73 )	PARAMETRIC DATA
INDUNE CONTROL OF THE	MSFC STR(SAISF) 142-IN SRB (139) MBES	

	0ETA = .000 PWI = FLOSTK = .000 AFTSTK = .4100 ATHS = .COMFIG = 3.000 SHOSTK =	1
	.8000 IN. .8000 IN.	
REFERENCE DATA	. 5535 54. IN TOURP 2 5.59 . 6555 IN. THEP 2 . 55 . 6555 IN. ZWRP 2 . 55	
	\$40° = LREF = BREF = \$CALE =	

s.00	
-5.00/	
INTERVAL =	
GRADIENT	
6.95	
#N/L =	
87/9	
SCH NO.	

774	An PWA	3	3	5	E	K L	5
	1				60000	01010	
7	E14 C1	1,17160	1.92690	1.54400	PE360.		3
		) ) ) , , ,			04140	61119	טטענט
1864	12.265	1.53245	2.63339	1.50480	neich.	3710	3
			86790 7	87377	07450	07310	00000
7	16.499	2.33390		2000			
	57 54	1 15610	5, 52545	1.48125	. 56565	05499	. 00500
	210.03					02000	80000
736	96.198	5.35479	5.33195	1,53970	. 26443	10001	
				90.22	03/4U	1551	00000
796.	29.450	6.95735	129C4.C	1.57/161			
		06233 v	6.144.2	1.59510	. 53510	.03520	. 05559
	539-16						
3	20.805	3.86235	4.97530	1,46129	26690	56915	
						11000	מטטטט
	<b>GRACIENT</b>	.31558	17946	. 5556v	00101	reen.	

# RUM NO. 64/ 0 RN/L = 7.02 GRADIENT INTERVAL = -5.00/ 5.00

•		į	3	đ	2	Cyl	5
5	YE Y		Į				
747	16.140	1.35469	1.95995	1.50769	.05850	51110	
			- 01550	1 52565	61010	03129	.00000
2.13	12,129	1.06163	7.000				5000
47.	16.229	2.74740	2.15749	1.94745	05199	. 99429	
		47700	2.17546	1.14495	. 99269	92976	. 00000
B. W.	00000		19360	1 25440	0000	. 95229	. 20000
5.479	626.12	03041.6	F. 366.3	. 4.55	00000	04710	00000
2.473	20.69	6.41969	2.01979	7.707.1			90000
3.479	39.643	7.05150	2.79470	1,45400	. 95170	v1335	GGGGR*
**	29.350	3.09619	2.19679	1.12669	-, 93939	92459	. 00000
	CAACIFUT	27496	.03617	. 32540	. 95942	.00103	.00500

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## TABLE ATED SOURCE DATA, MSFC TUT 578

MSFC 578(SA19F) 142-IN SAB (139) NBE3

(R91351) ( 61 NOV 73 )

	GEFERENCE BATA	2	3474								PARAMETRIC DATA	: DATA	
	77 47 6767	=	9982	11	S. 5578 TH.	ی				BETA =	. 990	PH! "	.090
2		:			26 0000	٠.				FLOSTE :	000	AFTSTK =	. 999
الاد		÷		) <b>1</b>	1 0000	<b>.</b>				A THENC =	100	ATHS	.055
100	. 8555 TM.	ż	745	#	. 0222 IN.	•				A CHIMAN			665
SCALE =	.9956									- 41 400	3000		•
			2	RUN NO. 219/ 1		EH/L =	4.92 GEA	DIENT INTER	GRADIENT INTERVAL = -5.00/ 5.00	90' 8'00			
		•	7	An Put	3		¥ 5	5	S.C	Crim	ಕ		
		•			•		90400	7007	.56170	7.22470	02450		
				30.330	•		20000	60767	43119	1.06349	02245		
				0.7.76			24140	03646	חטבביו	7,11435	51159		
						-	00127-11	13480	-,31860	5.41540	01329		
				22.00			5.62250	90499	48379	3,33490	. 99319		
					• •	•	200000	16790	44165	79235	-, 92859		
			,	26.50			3.06300	26740	UN -	05420	00310		
			ř.	692.67			00000000	0505.	CYGGY -	4.33460	-,03969		
			745	626.08	=		13,64130	orees.	00000		10000		
				GRACIENT	. 15985	283	.16515	03666	07097	49374	conne.		
			5	RUM NO. 211/ 1		BHAL =	6.24 GR	DIENT INTE	GRADIENT INTERVAL = -5.00/ 5.00	00. \$ .00			
							3	đ	3	300	Ē		
		-		4			Ę	5	N. I	W	30.00		
			906	59.710			17.27290	.63690	14750	1.95565	.00400		
			900	52.640	12.52600	••	10.57720	.57550	13915	1.79690	00145		
			900	56.690	0 13.59340		19.45040	.43435	51630	. 0986G	01659		
			900	69.740	14.59459	•	PO. 69465	.33250	36819	.07560	. 99370		
			000	64.755	_	•	20,55939	.25879	29249	15959	. 00215		
			600	66,650	-	•	17,74139	.25219	35915	05065	91459		
			666	70.525	•		16, 89739	.23839	24845	.03450	01640		
			006	60.749		•••	20.67295	.33289	30535	.11090	89459	•	
				<b>GRADIENT</b>			55754	02940	96531	-, 09672	-, 95965		
			3	RUN ND. 212/ 1		#N/L =	6.67	NDIENT INTE	GRADIENT INTERVAL = -5.00/ 5.55	00/ 5.55			
		-	100	An Owk	5		<b>E</b>	5	E.C	CYNH	ð		
			1 200	50.720	13		13.43609	1.19790	25740	12000	01940		
			1.200	52.630			14.94260	1.16290	29729	-,01570	. 99940		
			1.209	56.670		0,4	14.96460	1.12320	42879	. 04330	01725		
			1.200	60.649		329	15.14450	1.02490	28639	.28495	01150		
			2.290	64.649		967	14.64270	.97:56	06992"-	.01679	91319		
			1.299	63.649		299	14.67490	.97665	26595	05285	91159		
			1.200	79.579		160	14.27919	.95750	26759	09545	55265		
			1.290	69,670		476	14.95699	1,53265	29565	.25299	51645		
				CRADIENT		.23995	.03401	1-21g*-	. 69932	55735	,f 126		

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204	
2	
CATE	

## TABULATED SOURCE DATA, MSFC TWT 578

# MSFC 578 (SAIOF) 142-IN SRB (139) NBE3

### PAGE 33

(R91351) ( B1 NOV 73 )

	000.
: DATA	PHI = AFTSTK = ATHS = SHDSTK =
PARAMETRIC DATA	.000 .000 .100 3.000
•	BETA = FWOSTK = ATHRNG = CONFIG =
	5.5570 IN. .0000 IN.
BATA	TARP TARP
REFERENCE DA	. 6000 Se. IN 6000 IN 6000 IN
	SREF = LKEF = BREF = SCALE =

9.00
-5.00/
**
INTERVAL
GRADIENT
7.21
RN/L =
9
133/
RUN NO.

	4. DWA	3	¥	ð	C	C XX	e e
MACE	45.14					01001	COSCO
. 080	40 440	13.57740	8.44920	1.58780	29380	. 16610	
766.1	,			10000	DOFUE -	0.08540	01110
1.952	52,450	14.11950	.04800	1.0000	3000		
		16 41620	9.45850	1.51320	53220	13990	00880
1.952	20.00	201717			21.000	1000	0110
1.952	60.499	16.25985	9.35430	1.44735	-, 51964		
		17 16010	9.81500	1.36860	-,32310	14960	-, 02305
1.952	2000	07607-77			****	0000	0.005.0
- 452	68.595	18.38869	10.93500	1.27910	-,348/0	. 13630	0.100
	507 04	18 51715	10.76819	1.29149	32775	12340	-, 02565
1.936				Crozy .	21040	05820	51630
1.952	65.475	16.12120	9.07070	1.4505			4,000
	GRADIENT	.25116	.11910	01852	55184	55175	91000

# RUM NO. 91/ 0 RN/L = 6.94 GRADIENT INTERVAL = -5.00/ 5.00

77	41014	3	E C	ð	CYN	CYN	5
		10 01300	5.36650	1.71279	29670	17249	-, 0398
5,479	25.25	12.01.01	A 0016T	1.69410	-,29290	16420	0251
5.479	32.249	13.36639	7.12650	1,64850	30460	18050	0286
5.4.7	30.04	45 41600	A. 18770	1.57230	-,27965	17980	-, 0305
5.479	667.59	2011-51	A 92190	1.43710	-,27400	22410	0145
3.479	94.340	10.01030	9.53480	1.29170	25700	20930	0323
5.479	70 249	17. 47440	9.69655	1,21870	25450	20920	02230
7.70	60.290	15,36699	8.24020	1.56650	28310	15969	0137
;	GRADIENT	.23333	.21863	02497	. 05231	-, 05251	900.

(R913F1) ( 22 FEB 74 ) PARAMETRIC DATA	
	BETA = FWDSTK = ATHRNG = CONFIG =
MSFC 578(5A10F) 142-IN SRB (139) NBES	5.9570 IM. .0000 IM. .NI 0000.
	SREF = .5030 SQ. IN XMRP = LREF = .6559 IN. YMRP = BREF = .6559 IN. ZMRP = SCALE = .5056

	96	50	30	30	40	50	90	2	<b>6</b>			56	20	10	80	00	50	8	10				040	550	765	369	690	479	290	20550
5	. 01890	.01850	.02030	.01330	.61140	.04350	01550	.01470	00049		ಕ	.04550	.04800	. 54510	.03580	.04480	.09820	. 02100	.01010	00155		ខ	. 01040	.00659	.00769	. 02369	. 01690	. 91479	.01290	2
CYNE	.79450	1,35960	1.08250	.94030	99790	.62920	1.24350	. 89350	-, 09222	-5.00/ 5.00	CYNM	67656	14615	21480	15900	12320	.04770	. 59640	17939	.01023	-5.00/ 5.60	CYNM	.32450	.36050	.39999	.31619	.39970	.41719	.43050	07468
£	-,11685	.03770	99799	06350	.04180	.33250	,22039	-,13270	.01671	RVAL = -5.	CYN	28660	24280	19000	18610	25730	22480	21955	1969 <sup>£</sup>	.00238		EL C	.39020	.36800	.34740	.31380	.31270	.29920	.30000	01001
<b>5</b>	.43440	.46170	. 52060	.57678	.48580	.31280	.16835	.55510	01171	GRADIENT INTERVAL =	ð	.65120	.65759	.60590	.59870	.51719	.32410	.22520	.60250	-,02073	GRADIENT INFERVAL =	5	09020	.04030	.29660	.51739	.70230	.87379	.95320	
<b>#</b> 3	9.81930	8.50119	6.26149	4.09050	2.69265	1.00200	.46475	4,39450	-,47253	6.40 GR	G.	12,09700	11.17890	6.51815	5,75470	3,70399	1.81440	.52910	5.66579	-,59691	6.79 68	¥.	5.79150	6.12870	6.93570	7,91180	9.35570	10,12960	10,36420	1
8	11,70250	11,75630	12,19699	12,09700	12,08740	12,14950	12.97279	12.16359	.01991	O RN/L =	3	15,69650	15.82440	16.18480	16,49739	16,40060	16,15189	15.86959	16.35980	.01480	O RN/L =	Š	19,46570	19.64016	20,91570	20,16719	20.25200	20,04480	19,63689	
ALPHA	AG 200	62,950	86.019	89.970	93.960	97.935	99.820	89.980	GRADIENT	RUM NO. 227/ 0	A) PHÅ	85.410	82.285	86,195	99,100	94.056	97.990	99.850	90,190	<b>GRADIENT</b>	RUN NO. 255/ 0	AH PHA	160.400	98.530	94.560	90.600	36.640	82,679	80.780	
MACH	707	265	3	765	70	7	705	205		5	7	9		66	68	668	669	669	669		2	2	101	101	5		1.193	1.193	1,193	1

|--|

MACH 1.959 1.959 1.959 1.959 1.959 1.959 1.959	ALPHA 60,490 62,390 96,369 94,320 98,280 100,160 90,330	CNM 19.41090 19.56460 19.79330 19.76210 19.50230 19.22515 19.76640	CLNM 9.95150 9.60640 9.29690 6.53260 7.82740 7.02900 6.66790 8.52630	CA .81430 .72290 .52510 .13780 11250 22440 .31990	CYM -,36940,36040 -,36510 -,35610 -,31290 -,2120 -,34860	CYNH 04100 02340 02549 01920 02390 02391 01610	CBL 04460 04000 04000 02570 02590 04080 04080 02640 00093
Ž.	5. 927 G	# 1/N8 0	7.03	GRADIENT INTE	INTERVAL = -5.	.5.00/ 5?30	

KUR 180. 32,	2 (2)					;
AH DWA	3	¥ 5	<b>5</b>	CYM	CYN	<b>9</b>
		Deart o	ARGTG	38710	24265	02200
89.320	18.63269	30C) *				0.00
010 00	10.01.01	9.54900	.78300	37030	21419	010¥0
05.50		00000	02113	36056	25769	02850
66.170	nc66 : 61	9.00100				
90 170	10.23310	8.29569	.42470	33990	16449	02510
7 . 7 . 7 . 7			09000	12020	15370	02890
94.140	19.23630	7.39850	19505	1.010		
24.45	18 95410	G.69900	04449	28780	11259	00910
			02077	27900	16250	00900
109.019	16.73855	6.41469	14320			
90,176	19,24519	8.26485	.42770	33980	14920	uusca
	46400	17552	15164	.09537	. 00682	.00051
	111733	111111				

SREF = LREF = BREF = SCALE =

# MSFC 576(SA1GF) 142-IN SRB (139) NBE3

						* * * * * * * * * * * * * * * * * * * *		
	5.5570 IN.				BETA = FWOSTK =	000.	PHI = AFTSTK =	. 500
	.0000 IN.				ATHENG =	.155 \$.055	ATHS = SMDSTK =	. 000
-	RUN NO. 161/ 0 RN/L =	5.03 64	GRADIENT INTERVAL =		-5.00/ 5.00			
	NA V	£ 5	ಶ	Æ	CYNH	<b>a</b>		
	6,67300	-6.04960	-2.25750	.45780	1.68690	.01600		
	7,14110	-5.93410	-2.12650	.12730	1,78340	.02390		
	8.53990	-5.62340	-1.87490	.51710	1.95700	.01550		
	9.59760	-5.24960	-1.52190	.84750	.39780	. 05270		
	10,36390	-4.81930	-1.10250	.86945	. 9889ū	.09469		
	10.99729	-4.06400	78630	.96760	.96380	. 03220		
	11.11460	-3.87020	63019	.85590	1.14630	. 95190		
	9.51669	-4.78420	-1.57860	. 89080	.75700	-, 02510		
	22861	-,11147	06366	03386	. 94426	.00041		
	400	3	ð	¥.	CYNH	GPL		
	ž	¥	5		0.000	0000		
129.640	10.52300	-7.02970	-2.17570	. 33660	0.000-	00110		
	11.21160	-7.41959	-2.02190	37230	-, 13619	00000		
	12,32570	-7.66850	-1.68050	.38070	07025	0.000		
	13.48060	-7.55310	-1.39640	.33850	07440	99910		
	13,85590	-7.06479	-,95200	.43260	16780			
	14,77859	-5.91380	53185	.36860	.02740	00000		
	15.00960	-5.22760	34090	.28550	. 00250	01130		
	13.21410	-7.37810	-1.37860	.34870	-,18930	.06340		
	22138	-, 06995	09233	.00091	00419	05388		
	RUN NO. 159/ 0 RN/L =	6.76	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	.00/ 5.00			
	3	¥ 10	ಶ	Y.	CYNM	S E		
	14 10790	-1-07670	-2.41160	.27110	26760	. 52840		
	13,81090	69330	-2,26230	.29800	34120	. 91300		
	15.05360	38255		.28720	-,27280	.02819		
	15.68859	07890		.25180	-,14630	. 05928		
115.748	16,93770	.63810		.22749	14240	.01650		
760	17,73799	1.76360		.23960	17680	. 91 959		
	18.04295	2,25159		.22710	14175	. 02020		
119.760	15.85810	.14829	•	.25220	-,15800	. 0256		
CEANTENT	24626	- 16117		06500	00865	10004		

## TABULATED SOURCE DATA, MSFC TWT 578

(R913H1) ( 01 NOV 73 )

PAGE

		000.		
	DATA	PHI == AFTSTK == ATHS == SMDSTK ==		
	PARAMETRIC DATA	.000 .000 .100		CBL .01630 .01736 .02610 .02610 .01440 .02536 .00620 .01559
	-	BETA = FLOSTK = ATHRNG = CONFIG =	00.8 /	.03090 .03710 .03710 .03140 .05290 .01340 .01340 .00560
			AL = -5.0K	CYM .27630 .29600 .35070 .35470 .34750 .34750 .34750 .34750
MSFC 578(SA10F) 142-IN SRB (139) NBL3			GRADIENT INTERVAL = -5.00/ 5.00	CA -2.35260 -2.22550 -1.95660 -1.57170 -1.19260 84260 67590 -1.54610
142-IN SRB			7.16 GR	CLMM 1,75630 2,12620 3,21520 3,41270 3,73440 3,79660 4,29590 3,69440
578 (SA10F)		5.5570 IN. .0500 IN. .0000 IN.	RN/L =	CNM 12.33950 12.95840 14.22440 15.46570 17.66670 17.87960 15.19480 -28366
MSFC		10 41 11	RUM NO. 159/ 9	ALPHA 129.780 127.909 112.920 115.840 111.899 119.909
	CE DATA	IN XMRP VMRP	10 H	1.947 1.947 1.947 1.947 1.947 1.947
	BEFEBENCE DATA	. 5030 Sa. . 6050 IN. . 6050 IN.		
		SREF = LREF = BREF = SCALE =		

RUN NO. 198/ 0 RN/L = 7.10 GRADIENT INTERVAL = -5.00/ 5.00

CYNM .18600 .21920 .17630 .11320 .07650 .07290 .12320	
CYM .25220 .24280 .23820 .27120 .27160 .28540 .26180	1706
CA -2.44540 -2.30560 -1.69605 -1.15330 80470 64960	09173
CLWH 2.28180 2.49670 3.0320 4.02420 4.48890 4.72990 3.69710	12357
CNM 11.39360 12.03960 13.17890 14.31140 15.41880 16.80990 14.28439	- 27213
ALFHA 129.940 128.010 124.030 120.990 111.960 110.080	COARTEMY
MACH 8.479 8.479 8.479 8.479 8.479 8.479	

SREF = LREF = BREF = SCALE =

## TABULATED SOUNCE DATA, NSFC TUT 578

HSFC 578 (SA10F) 142-IN SRB (139) NBE3

(R913J1) (B1 NOV 73 ) PAGE 38

	000.																																	
DATA	PHI = AFTSTK = ATTST = SHDSTK =																						•	•										
PARAMETRIC DATA	.000 .000 .100		CBL	.00400	- 50,629	. 00400		62266	00000	onten.	. 01100	00026		ą	00380	.09270	.00729	-, 05190	01060	.00259	.01460	.00530	-,00052		9	.00060	.05319	.00546	.06130	. 59119	. 01665	. 95965	96559	-, 05533
	BETA = FWDSTK = ATHRNG = CONFIG =	19, 5.60	CYNH	.05450	. 04 52 5	07270	07001	-,52249	26076	-,31185	14690	.62122	90' \$'00	Cylin	03990	01739	02820	13880	28410	16610		14440	.00751	-5.00/ 5.0	CYN	01650	06920	-,13459	-,33940	-,34570	14470	05970	-,31680	.05478
		GRADIENT INTERVAL = -5.09/ 5.00	CYN.	.01940	.01280	-,01169	00000	08699	24129	28559	91440	.01476	6.24 GRADIENT INTERVAL = -5.00/ 5.00	CYH	.02540	.01130	04720	05730	10500	26650	16420	09145	.01169	RVAL = -5.	E.	09810	02246	01650	05770	11730	11630	-,10320	-, 05830	.00541
		ADIENT INTER	ಶ	-1.78330	-1.90170	-2.11935	-2.36389	-2.64880	-2.85080	-2.85749	-2.36020	. 95602	ADIENT INTE	ð	-2.05390	19766 6	-2 46400	P REFER	20000	-C-04100	00440	19.66990	.04562	GRADIENT INTERVAL =	5	-3.01976	-3.08970	-3.16769	-3.26030	-3.39916	-3,52910	-3.50100	-3.26580	.02431
		4.95 GR	<b>₩</b>	-1.14260	-1,42300	-1,75330	-1.62190	-1.96850	-2.57010	-2.94420	-1.79009	.07663	6.24 GR	<b>1</b> 0	15790	DEFOC -	0000		66699*1-	24.6119.2-	-3.64639	-1 61400	.17247	6.66	į	1 38970	-1.78550	-2.52A70	-3.26210	-3.74659	-3,94490	-4.09570	-3,23220	.12950
	5.5570 IN. .6089 IN. .9689 IN.	B RN/L =	3	.59630	.78699	1.29830	1.91410	2,59850	3,56410	4,02330	1.68460	16963	D RM/L =	3	40140	04600	00000	01406.1	0.5863.2	3.05049	4.12910	#.0001U	19190		į	90400	196190	1 02730	2,44460	4.15790	5.78849	6.54629	7 AA445	26461
	n 11 n	RUN NO. 14/ 9	ALPHA	170.050	168.569	164.020	159.970	155.865	151.760	149.820	159.970	GRADIENT	RUN NO. 13/ 0	As Pres		170.000	166.020	165.950	199.760	155.590	151.350	149.360	CPADIENT	RUN NO. 12/ 0	400	ALTER .	104.601	141 670	150 445	144 140	150.000	148.780	149 440	GRADIENT
: DATA	IN XMRP YMRP ZMRP	2	MACH	. 599	.599	.599	.599	.599	.599	.599	.599		2	7			969		<b>363</b> .	. 896 1	968.	960.	6	ş			1.195	661.1	661-1					****
REFERENCE DATA	. 2556 52. IN . 6555 IN. . 6555 IN.																																	

## TABULATED SOURCE DATA, MSFC TUT 578

(R915J1) (U1 MOV 73 J	PARAMETRIC DATA	TK = .000 PHI = .000  TK = .000 AFTSTK = .000  NG = .100 ATMS = .900  IG = 3.000 SMDSTK = .000
#SFC 578 (SAIDF) 142-IN SAB (139) NBE3		BETA FWDSTK THRNG CONFIG
MSFC 578 (S.	CATA	N XMRP = 5.5575 IN. YMRP = .0505 IN. ZMRP = .0595 IN.
	REFERENCE DATA	. 5959 Se. IN . 6959 IN. . 6956 IN.

### 66/ 0 RN/L = 6.96 GRADIENT INTERVAL = -5.00/ 5.00 RUM NO.

SREF = LREF = BREF = SCALE =

. 00000 . 00000 . 00000 . 00000 . 00000 . 00000 . 00000 . 00000
CTNM .11710 .02620 22420 03270 00070 .03070 01809
CYM .00760 .03020 .05260 .01640 .00800 .00520
CA -3.11270 -3.13750 -3.19590 -3.25520 -3.5620 -3.5620 -3.21770
-1.25370 -1.45570 -1.4130 -1.61350 99440 19960 -1.39560
CNM . 83309 1.13289 2.97419 3.31840 6.02519 6.72799 3.31269
ALPHA 169.650 167.630 159.560 159.640 159.640 148.810 159.390 6RACIENT
MACH 1.954 1.954 1.954 1.954 1.954 1.954

# RUN NO. 73/ 0 RN/L = 7.01 GRADIENT INTERVAL = -5.00/ 5.00

,	AL DUA	3	Ž.	5	Ž	Ž	9
		į			0000	0000	מטטטט
440	170 000	64380	45989	-2.92769	79670.	nicin.	3
				20000	50700	U1710	. 09500
3.479	160.040	.96320	35860	-2.30/12	30.00	3	
	000	1 75955	12910	-3.06240	91356	. 00330	. 00000
2.4.7	706 - 601				20100	00 t C0	UUUUU
5.479	159,830	2.58860	.22730	-3.2112.		00170	
	900	117557	56950	-3.29590	. 00140	. 02260	00000
5.473	100.001	2				03770	00000
3.479	151.519	4.89629	.76975	-3.31540	01150		
	140 520	4.44450	37135	-2.90300	.09349	. 02555	. 06000
2.4.9	337.641				26363	27773	0000
2.479	159.835	2.59670	.24519	-2.6000			
) )	GOADTENT	-,23363	05406	. 00937	60000.	05558	. 66599

(R913F2) ( 22 FEB 74 )

PARAMETRIC DATA

# MSFC 578 (SA10F) 142-IN SEB (139) NBE3

	REFERENCE DATA	7.4			a.	PARAMETRIC UALI	S S S S S S S S S S S S S S S S S S S	
SACF = 1	. 8000	XMRP YHRP ZMRP	# # #	5.5570 IN. . 0050 IN. . 5055 IN.	BETA = Fudstk = ATHRNG = CONFIG =	.000 .000 .100 3.000	PHI = AFTSTK = ATHS = SHDSTK =	000.

5.06
-5.00/
**
INTERVAL
GRADIENT
6.01
**
RN/L
6
7922
NO.
5

G G	.01590	.01940	. 02209	.02550	. 51259	.01990	.03246	.05750	.00037
CYNM	-,12590	16970	02740	01999	.03520	.15955	.11610	01929	.01374
CYN	37330	-,33970	-,32590	31440	-,35659	32440	-,32790	31729	.00183
ð	.75430	.69010	.53830	34969	.14659	-,19139	21160	.35150	54944
	10.56910	10,22760	9.47519	6.01980	7.62710	7,39859	6,81530	7.99410	19189
3	19 42750	19.47235	19. A0710	19.95660	20.10300	26.06560	19,88369	19.92475	. 52952
THO IT	460	201.00 CR. CR.	200	90.3C	94 250	94 250	190,130	95.269	GRADIENT
3713		961.1	967.1	961-1	961-1	101	961-1	196	

#STEFERENCE DATA  *5939 \$4. IN XMRP = 5  *8959 IN. YMRP = 5  *9959 IN. ZMRP = 6  *9956	MSFC 578 (SA10) 5.5570 IN. 6000 IN. 6000 IN.	MSFC 578(SA19F) 142-IN SRB (139) NBE4	8 (139) NBE4			(R91481)	11) ( 01 NOV 73	~ 2.
E DATA  IN XMRP = YMRP = YMRP = ZMRP	200							
IN XMRP = YMRP = ZMRP = ZMRP = ZMRP = 2MRP = 11,0 15,0 11,0 15,0 15,0 15,0 15,0 15,0	2 8 8					PARAMETRIC DATA	: DATA	
RUN NO.  RUN NO.  896 9.5  896 25.5  896 26.5  896 26.5  896 26.5  896 26.5  896 26.5  896 26.5  896 26.5					BETA =	000	E .	.000
TWRP = 2MRP = 2MRP = 596 9.5 596 25.5 5	5 5				¥	000	AFTSTK =	.000
RUM NO.  84CH ALPH 556 9.5 556 11.5 556 20.5 556 20.5 556 20.5 556 20.5	ž				ATHRNG =	.100	ATHS =	.000
ALPY ALPY 5 115.5 5 125.5 6 20.1 6 20.1 6 20.1					CONF 16 =	4.050	SHDSTK =	. 000
		4.93	GRADIENT INTERVAL =		-5.00/ 5.00			
		i	ť	Š	CYNE	Ę		
	E 1719		95840	01510	.05760	. 99990		
	Ī	_	05026	.96670	02520	. 00000		
			98130	38600	69470	.00000		
			96190	.87070	-1.44430	.00000		
<b>.</b> .			90650	1.15340	-1.78550	.00000		
<b>.</b> .		-	.86165	1.02650	-1.26139	. 69955		
3			86289	1.07619	83270	. 00000		
3	0 4,0863U		01000 01000	.85729	-1,45650	.00500		
WANTEN WANTEN			-,05583	.05924	96333	.00000		
	•	*	CDADIENT INTERVAL =		-5.00/ 5.00			
S S S S S S S S S S S S S S S S S S S		•				;		
MACH ALPSA	S	<u>F</u>	đ	ž	<b>1</b>	3		
84	0 1.05510		1.16430	.01669	. 56880	. 00000		
			1.17330	. 55029	.01660	. 00000		
	•	0 1,35120	1.15800	.42385	09660	. 09909		
			1.13120	.38690	-,35400	.00000		
	•	.5 4,47390	1.58629	.79669	79750	00000		
			1.03910	.51659	30379	. 00000		
	Ī	0 7.91220	.99000	.52120		60660.		
	••	10 2,57360	1.12690	35700		. 20099		
5		35 .37866	55831	. 02749	01974	. 00000		
RUM NO.	44/ 0 RN/L =	6.65	GRADIENT INTERVAL =	ERVAL = -5	-5.00/ 5.00			
4H9 14	3	3	ಶ	CYN	CYNA	<b>e</b>		
_	-	-	1.56430	. 03690		. 20000		
	-		1.60159	.06700	12440	. 95555		
	•		1.61599	.21339	32210	00000		
	) p/1		1.58545	.28370	-,24535	. 09500		
	•		1.51419	.39679	23889	.09990		
	•		1.46379	.25549	.15630	. 55555		
		-	1.42350	.15610		. 09599	_	
			1.54510	.22519	•	. 55555		
610-62 162-1	•		09814	.00752		.00000		

(\_

(R914B1) ( 61 NOV 73 )

	000.
4	PHI = AFTSTK = ATSTK = SHDSTK =
PARANLIKIL UAIA	. 909 . 950 . 150
<b>L</b>	BETA : Fudstk :: ATHRWG :: CONFIG ::
	5,5570 EM. .0000 EM.
	XMRP 11
REFERENCE DATA	. 8050 58. M M . 6050 58. TM . TM . 6050 58. TM . E. 6050
	SAEF = SAEF = SCALE = SCALE =

# RUM NO. 50/ 5 RN/L = 6.97 GRADIENT INTERVAL = -5.00/ 5.0

MACH 1.952	ALPHA 16.220	CNM 1.11430	CLMM 2.18550	CA 1,23499	CYM . 02440	CYNN . 93669	. 99969
1.952	12.276	1.46910	2.90830	1.20480	. 94930	-, 50279	99999
1.952	16.525	3.47769	5,21540	1.19950	05290	01659	. 09999
1.952	25.140	5,35295	6.12050	1,29475	.03995	.11790	. 99599
1.952	29.555	6.96863	6.39415	1,34480	.02845	.25290	. 05050
1.952	31.555	7.76570	6.52360	1,35620	.03729	.13860	annan'
1.952	29.820	3.84215	5.25455	1.18655	0.05870	0.000	66666
	<b>GRADIENT</b>	.31698	.25264	92754.		99666	,

# RUN NO. 63/ 0 RN/L = 7.01 GRADIENT INTERVAL = -5.06/ 5.09

7777	AI PHÁ	2	Ŧ	ฮ	Z.	Z.	ಕ
					0000	04000	
470	10.159	1.33989	2.25675	.7775	55225		
,			-	77620	51010	02850	20000
3.479	12.120	1.72239	C.2C33.7	200			
	16.216	2.75916	2.58560	.83030	92465	.03600	. 55555
				00000	00120	01256	00000
3.479	29.360	3.78465	2.75929	19175	nerna.		,
	24 610	06746 7	2.98520	1.05670	.00400	. 93970	. 00000
24.0	24.5				00000	04400	מחהחה
5.479	28.695	6.26485	3,30945	1.10101	00/20		3
	30,669	6.90490	3,54365	1.14679	.01185	.05340	. 95555
•				61110	56125	G1980	00000
3.479	25.365	3.78443	C. 7497.5	21416	20100		
	<b>GRADIENT</b>	.27294	. 96146	20610*	. 55574	.05115	. 2000

	;		1484.4	TED SOURCE	TABULATED SOURCE DATA, MSFC TAT 578	176 TAT				PAGE	2
21 21 20 20 20 20 20 20 20 20 20 20 20 20 20	<b>:</b>		7	: 578 (SA19F)	HEC 578 (\$419F) 142-IN SRB (139) HBE4	(138) ME4			(R914D1)	13 ( B1 HOV 75	. 2
	•							•	PARAMETRIC DATA	: DATA	
	REFERENCE DATA	DATA							. 6	**	000
	.5639 54.			5.5578 IN.				FLIA :		¥	900
		E		. 9999 IN.					100	ATHS =	.000
	.0555 1M.	E.		. 9609 IN.					4.000	SHCSTK #	000.
SCALE =	. 9556										
		RUM NO.	HD. 209/ 0	0 #W/L =	4.90 GRA	GRADIENT INTERVAL =		-5.00/ 5.50			
					į	. 5	7	Cyn	ŧ		
		HYCH	ALPHA	ž			00559	1.99140	.00810		
		. 595	50.320	7.61630	9.75989	. 34690	00000	13.32545	05299		
		. 593	\$2.23	8.52519	10.79495	00062	19770	-2.89190	02030		
		.593	56.250	9.78995	06200.21		0.111	-1.90530	.03760		
		. 595	69.280	11.11580	13.53520	16230	06590	34700	.02960		
		.593	64.310	02664.11	14.01373	2776	- 275AD	D6906	083390		
		.593	68.310	12.02449	13.96140	. 69066	1 1 1 1	Date of	03400		
		. 595	70.216	12.03529	14.11380		00100	-2.03029	02360		
		593	60.280	11.12695	13.51430	enera		19161	07000		
			<b>GRADIENT</b>	.22295	.21419	03533			•		
		RUN NO.	7902	D RM/L =	6.23 GR	CRADIENT INTERVAL =		-5.00/ 5.00			
		•		į	3	5	E C	Cylen	ಕ		
			MC736			46160	08420	36650	.02350		
		206.	20.690	11.87030	13.00.01	40040	01340	.03300	.02069		
		206.	25.610	12.45100	04191.11	27640	27920	. \$2660	.00360		
		<b>306</b>	26.680	13.49320	00001.61	244	13589	16650	.02920		
			60.700	14.43020	19.73050		15140	16890	.02460		
		.902	1004.100	15.02310	19.34545	91770	00101		01640		
		.90¢.	61.630	15.12940	17.32440	0.00	63734.	00500	04170		
		<b>306</b> .	70.520	15.18300	16.69195	15650	5.135		95618		
		386	69.116	14,56690	19.8540	13861		03860	POUCU		
			<b>CRADIENT</b>	.16956	.02963	01999	00969				
		2	RUN NO. 207/ 0	D BNAL =	6.63	GRADIENT INTERVAL =		-5.00/ 5.00			
				3		5	Š	CYNN	ಕ		
			45.00	13.01596	12.28460	1.02040	30370	09770	.01650		
		102-1	40.470	14.54540	12,67980	92266.	33050	08620	.01360		
		102.1	0.0.30	04404 44	13.74496	06130	31646	15950	.00710	_	
		102.1		16. 87170	14.05679	.45350	34190	20610	00010	_	
		102.1			14.82490	.76650	25430	21638	.01920	_	
		102.1			14.41750	75480	28190	12500	.02140	_	
					13,64196	78460	36110	16290	.01879		
		1.501	70.340	18.7350	14.54439	06360	-,35160	29310	. 60770	_	
		1.201			19000	01130	09187		.00030	_	
				. 6470		•					

.000

PAGE 44

3	Z		I	¥. J	5	Z.	CYNH	Ę
1.954	50.5		1865	8.42580	1.37670	31260	-,12210	61240
954	52.4		4239	8.61140	1.36180	-, 31330	11759	55789
354	56.4	-	1710	8.90990	1,34200	32510	11830	61985
35	69.4	-	7555	8.82959	1.29145	31976	09225	01890
25	2.3		5179	9.46699	1.21815	-,32679	11245	01795
354	69.5	•	9180	19,45679	1.14685	33510	11160	01255
3	70.4		1739	15.40650	1.11279	32735	09020	52510
3	65.4		6239	8.69775	1.28635	31149	-, 04790	95749
	GRADIENT		.24396	.15458	01343	00091	. 90106	05529
2	ğ	94 O R	RN/L =	7.93 64	GRADIENT INTERVAL =		-5.00/ 5.00	
Æ	7		<b>=</b>	CLM	đ	Y.	CYN	៩
5	50.3	_	6730	5.48480	1.45116	29970	11760	02880
2	52.26	_	7040	5.95339	1.45395	09562*-	-,12580	-, 92479
5	2.96	_	1630	6. 29480	1.43945	29490	-,11540	62250
5	69.2	_	5760	7.91699	1.39645	29940	15370	03340
2	3		0290	8.78329	1.39799	29319	15550	03769
2	66.3	_	2340	9.33369	1.25785	29580	16559	03209
5	79.2	_	7869	9.54250	1,15435	25440	12349	93259
5.479	60.289	_	15.56665	7.94230	1.39315	29535	13569	52265
	-							

PAGE 45	(R314F1) ( 01 NOV 73 )
TABULATED SOURCE DATA, MSFC TUT 578	MSFC 578(SA1DF) 142-IN SRB (159) NBE4
BATE 19 AUG 74	

	•									
.5035 Se. 1M			5.5570 IN.					.003		
. 8555 IN.			.9999 IN.					000	_	
8555 IN.	ZHEP	*	.0565 IN.					120		
9386							CONF16 =	<b>4</b> . <b>a</b> 59	SHOSTK ::	
	3	RUR NO. 241/ 0	D RNAL E	4.96 684	GRADIENT INTERVAL =	IVAL = -5.	-5.00/ 5.00			
	277	At PMA	3	CLIM	ಶ	E.S	CYMM	ಕ		
		89.200	11.69745	19, 89340	.25729	06960	09265.	. 02790		
		87.090	11.623.0	9.97670	61592.	07660	1,53480	00963		
	105	640,049	11.92369	7.68420	42629	05150	1.36130	06200*-		
		96.555	12,19545	5.68679	.49155	20219	1.19685	-, 91555		
	100	88.965	12,04649	2.61110	.48439	16300	1.66179	-, 99479		
	205	050.70	12,15849	1.13409	.39720	-,21450	2.05490	03690		
		99.820	12,13919	39940	.16359	16560	2,33329	03160		
	765	29.940	12,19279	4,69949	.55670	17585	1,23960	00575		
		GRADIENT	16526.	55268	00159	00T31	.56411	50218		
			į	3	t	X	CYN	é		
		ALTHA	<b>E</b>	Ę	5			64646		
		85.429	15.73150	12.43045	.36769	21000-	01400	2000		
	. 69.	82.399	15.00169	11,79669	.42975	54990	00111.	02100		
	. 896	96.210	16.61540	9.06360	. 59970	-,35670	.13860	.05190		
		99.120	16.29245	6.37020	.66259	20359	.13660	.03305		
	•	94.5:0	16,19949	4.37369	.56330	29419	.18220	.01940		
	=	90.000	16.01669	2.14730	.37180	27559	. 29469	.02750		
		99.060	15,64490	.95770	26092	25595	.18565	.03360		
	169	90.130	16.43935	6.57420	.65149	29245	.15590	.03610		
		GRADIENT	.91017	59976	99478	.00465	. 00609	. 00042		
	5	RUN NO. 243/ 0	O RNAL =	6.67 GR	CRADIENT INTERVAL = -5.00/ 5.50	RVAL = -5.	.60, 5.50			
	2012	. 41 PMA	3	2	5	C	¥.5	ਵੱ		
	100	80.500	19.46560	10.67200	.02030	-,37326	14300	01040		
	100	82.375	19.57120	10,65710	.76996	37550	15940	.05370		
		86.350	19.70339	10.20240	.58780	33550	06190	. 60290		
	501	90,300	19,92030	9.56070	.39590	31380	03420	. 29050		
		24.285		7,96990	.17275	35665	03460	90569		
	1.193	94.250		7,31160	-, 05430	28660	02530	00069		
	1.165	100.139	19.77360	6.91730	16250	2.29650	. 95429	. 96769		
	200	90.399	19,99669	9.03690	.39525	31660	02045	.00630		

# TABULATED BOURCE DATA, MSFC TUT 578 MSFC 578 (5410F) 142-IN SRB (139) NBE4

(R914F1) ( S1 NOV 75 )

IC DATA	.000 PHI = .055 AFTSTR = .105 ATHS = 4.005 SHDSTR =
PARAMETRI	
	BETA = FWSTK = ATHRNG = CONFIG =
	5.5579 IN. . 0559 IN. . 0550 IN.
41	
20	
ALFERENCE BATA	. 6000 50. . 6000 1M. . 8000 1M.
	2000 2000 2000 2000

999

			į	į	3	75.5	Ē
7744	A: PMA	5		5	-		1
				1		61910	AALU
*	008 UF	14.56510	16,12970	67489		3000	
1.733						04440	3446
****	-	2016	3,44975	78639		00110	
1.437	06.30	1001000					7720
	-	03770 41	8 278BG	COPPS.	37585	51580	100
. 33		70.00	300.400				
	610	00000 00	. 44740	CSTT	2.85975	62726	- 1683
1.955	700°DE	13068.61					
	000	2122	4 45915	17850	1.8365.1	-, 91469	
1.955	125.15	13.1121			1		
	200	-	A 454.40	0.4820	-,31355		9238
	762.00	14.0000	10111			1 . 1	
		10 19190	6 51583	15269	. 29935	51545	- 3362
1.933	100					1	****
	40.110	10 77450	51115 T	38529	35529	51675	
7.437	10.00	101					7000
	************	-	64644	ALCRO I		90 (17)	

N. W.	RUM NO. 1	93/ 0		#N/ =	7.03	CRADIENT INTE	INTERVAL = -5.	-5.00/ 5.00	
	1			3	2			CYPE	ē
		. e	=	67410	9.7106			22410	02479
2.0		2 9	: :	91919	7515			21490	02780
	¥ •	3 6	:		1000			18415	01800
		2 6	: :	01334	1277			18350	-, 02640
			: :	16810	7,7919			15410	92*39
		3 5	: :	60200	6.91785	006900	29250	12845	51570
	900			74660	6.4687			12249	-, 51619
	90.1	2	2	24699	1.4764			15599	51625
	CEADIE	Z	•	.95653	1637			. 95513	. 9594

FIGURE DATA  **SORS SA. IN NORP = 5.5579 IN.  **SORS IN. THE P. CORD IN.  **SORS IN. T	DATE 19 AUG 74		TABUL	TABULATED SOURCE BATA,		MSFC TWT 578				•	PAGE 47
*** STATE CONTROL NOT			MSF	578 (SA19F)	142-IN SE	8 (139) NBE4	_		(R914H		KOV 73
## NAME = 1.0000 IN.  ***SOD IN.**  ***POD I	REFERENC	E DATA							PARAMETRIC	: DATA	
FIGURE =0000 IN.	_	IN XMRP	**	5570 IN.					666	3	990.
### NO. 1147 O RHVL = 3.00 GRADIENT INTERVAL = -5.COF 5.00  ##################################		;	н	0000 IN.					901.	4	600.
RUM ND. 174/ 0 RN/L = 5.00 GRADIENT INTERNAL = -5.00/ 5.00  ALPHA CNH CLNM CLNM CT	_		54	DODD IN.					4.090	¥	. 000
122,885		2	NO. 174/			ADIENT INTER		00'5 /00'			
## ALPHA CMM				į	3	č	NA.	CYNH	CBL		
122.965   1.2910   -7.09575   -1.09530  52060  39610   -7.0950   -7.0950   -1.67220   -64770   -7.0960   -7.0950   -1.67220   -64770   -7.0960   -7.0950   -1.05240   -1.07570   2.36280   -7.0950   -1.36240   -4.07570   2.36280   -7.0950   -1.36240   -4.07570   2.36280   -4.5860		MACH	ALPHA	CN1	A 44610	-2.00940	77920	.08760	. 00500		
115.940   9.39290   -7.25890   -1.67220   64770   .70040   .70040   .153.940   9.39290   -7.25890   -1.36240   -0.07570   2.36280   .200291   119.940   10.91640   -5.67410   -1.11730   .46740   3.26220   .119.940   11.17710   -4.92810  70450   .31340   14.7780   .200293   11.72540   -4.45880  63750   .313540   1.47840   .47840   .47840   .200293   -1.2149  06949  04979  11365   .200790   .200293   .12149  06949  04979  11365   .200790   .200293   .12149  06949  04979  11365   .200790   .200200		. 59£	129,655	25190	0.2540.7-	02606-1-	-, 52060	39610	.02030		
115.940		866.	127.965	0 40200	-7.25899	-1.67220	.64779	.79949	. 02469		
111.940   11.47710   -4.92810   -1.11730   .46740   3.26220   111.940   11.47710   -4.92810   -7.8765   .41320   1.47840   1.47840   1.47840   -4.45860   -5.5750   .31340   1.62660   1.6260   1.6260   1.62660   1.6		966.	165.945	10.26190	6.98910	-1,36240	07579	2,36280	01 500		
111.940   11.47719   -4.92810  78769   .43120   1.47840   110.039   11.72540   -4.45880  63759   .31549   1.62660   11.72540   -4.45880  63759   .31549   1.62660   11.9249   10.11970   -6.76540   -1.40650   .02239   2.04790   -1.1365   -2.0293   -1.1249  06949  04979  11365   -2.04790   -1.1365   -2.02599   0.15420   -2.02599   -1.02599   -1.02599   -1.02599   -2.02590   -2.02510   -2.02599   -2.02599   -2.02599   -2.02510   -2.02210   -2.02510   -2.02510   -2.02510   -2.02510   -2.02510   -2.02599   -2.02610   -2.02210   -2.02599   -2.02610   -2.02210   -2.02289   -2.02610   -2.02289   -2.02610   -2.02289   -2.02610   -2.02289   -2.02610   -2.02289   -2.02610   -2.02289   -2.02610   -2		860	119.940	10.91640	-5.67410	-1.11730	.46749	3,26226	.01749		
RIN NO. 175 U RN/L = 6.32 GRADIENT INTERVAL = -5.00/ 5.00 CRADIENT 119.940 10.11970 -6.76540 -1.40650 .02530 2.04790 24M NO. 175 U RN/L = 6.32 GRADIENT INTERVAL = -5.00/ 5.00 CVM CVM CLMH CA CYM CYM CYM CYM CLMH CA CYM		960	111.940	11,47719	-4.92810	78769	.43120	1.47840	.02889		
119.340		960.	010.011	11 72540	4.45880	63759	.31545	1.62660	.01659		
CRADIENT2029312149069490497911365  RUM NO. 175/ 0 RN/L = 6.32 GRADIENT INTERVAL = -5.00/ 5.00  RUM NO. 175/ 0 RN/L = 6.32 GRADIENT INTERVAL = -5.00/ 5.00  1 129.590		860	000.011	10.11970	-6.76549	-1.49659	. 92539	2.04790	.01690		
ALPHA CNH CLMH CA CYM CYNH 129.590 10.54250 -8.37950 -1.95160 .1605023210 - 129.590 10.54250 -8.37950 -1.95160 .1924009210 - 123.640 12.19410 -8.57220 -1.5160 .1924009210 - 119.650 13.39810 -7.75600 -1.39700 .28280 .33420 - 119.650 13.39810 -7.75600 -1.39700 .28280 .33420 - 119.640 14.13740 -6.3312092890 .22060 .30995 - 119.640 14.75870 -5.6425036280 .18150 .12975 - 119.640 13.31930 -7.67350 -1.31150 .28770 .32750 - 119.640 13.31930 -7.67350 -1.31150 .28770 .32750 - 129.640 13.31930 -7.67350 -1.31150 .28770 .32750 -1.31150 .28770 -32750 -1.31150 .28770 -3.2750 -1.31150 .28770 -1.32750 -1.31150 .28770 -1.32750 -1.31150 .28770 -1.31150 .28770 -1.31150 .28770 -1.31150 .28770 -1.31150		9 AC •	119.945	20293	-,12149	06949	04979	-, 11365	-, 95542		
ALPHA CNH CLMH CA CYH CA CYH CYNH 129.590 10.54200 -8.37950 -1.95160 .16050 -2.2310 -8.56225 -1.81860 .19240 -0.09210 -1.23.640 12.19410 -8.57920 -1.55970 .29650 .05120 -0.09210 119.640 12.19410 -8.67920 -1.35970 .29690 .33420 -33420 1119.640 14.13740 -6.6312092890 .22860 .35990 .22260 14.75870 -5.6420052380 .18150 .22280 .22280 119.640 14.75870 -5.6420052380 .18150 .12970 .22280 119.640 13.31930 -7.67350 -1.31150 .28770 .3275022680 .131150 .22770 .32750 -1.31150 .22770 .32750 .12970 8 129.640 13.31930 -7.67350 -1.31150 .28770 .32750 .12970 8 129.620 13.25750 -2.69780 -2.20780 .2560017600 .19530 8 123.720 13.9170 -2.29780 -2.20780 .2650013640 .109780 119.710 16.9520 -1.47910 -2.20780 .2650013640 .109780 119.720 16.92500 -1.47910 -1.79190 .265000210001350 119.720 16.92500 -1.47910 -1.562200210002500 119.720 119.720 11.5359066220 .257100210002500 119.720 119.720 11.5359066220 .27710021000210002100 119.720 119.720 11.5359066200 .27710021000097600916		2	175/	RN/L		ADIENT INTE		00'5 /00			
129.391   10.56295   -8.37956   -1.95169   .16056  23210   -23.5256   -1.81860   .19240  09210   -0.92560   12.19410   -8.67926   -1.59759   .29659   .05120   -0.9216   119.650   13.30810   -7.70609   -1.39709   .28289   .33420   -3.5640   14.13740   -6.63120  92899   .22060   .30999   -2.2060   .30999   -5.64299   -5.22899   .22060   .30999   -2.2289   -2.2289   -7.67359   -7.573939   -7.5739		į	41.014	3	ž.	ర	£	CYNM	JB JB		
127.675 11.03510 -8.56226 -1.81880 .1924009210 -123.640 12.19410 -8.67920 -1.55975 .29650 .05120 -123.640 12.19410 -8.67920 -1.55975 .29650 .05120 -1153.640 14.13740 -6.6312092899 .22860 .33420 115.640 14.13740 -6.6312092899 .22860 .30995 111.670 14.67980 -5.64295 .28780 .18150 .22280 119.640 13.1930 -7.67350 -1.31620 .24170 .22280 .129750 119.640 13.1930 -7.67350 -1.31620 .24170 .22280 .22280 .1319.640 13.28770 -5.6730 -0.08157 -0.0517 -0.0556 .28770 .32750 -1.6567 -0.08157 -0.0517 -0.0556 .28770 .32750 -1.6567 -1.08157 -0.09177 -0.0556 .19530 .22200 -1.1669 -1.6710 -1.79190 .2669017650 .16570 -1.02160 -1.22200 -1.1660 -1.02150 .26690 -0.07160 .26670 -1.02160 -1.22200 -1.3640 -0.0330 .26670 -1.02160 -1.22200 -0.0330 .26670 -1.02160 -1.22200 -1.2220 -0.02250 .27210 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.02250 -0.0220 -0.02250		MACH 004	20 400	10 54250	-8.37950	-1.95160	.16959	-,23210	02320		
123.640 12.19410 -8.67920 -1.55975 .29650 .05120 -119.650 13.30810 -7.70600 -1.30700 .28280 .33420 .33420 115.640 14.13740 -6.6312092899 .22060 .30995 .111.670 14.67980 -5.6425092899 .22060 .30995 .111.670 14.75870 -5.6425031620 .24170 .22280 119.640 13.31930 -7.67350 -1.31150 .24170 .22280 .12975		100	127.676	11.63510	-8.56220	-1.81880	.19240	-, 09210	01795		
119.650 13.59810 -7.70600 -1.30700 .28266 .33420 .115.640 14.13740 -6.6312092899 .22060 .30996 .12970 111.670 14.67980 -5.6420052389 .18150 .12970 .12970 19.760 14.75870 -5.7723631620 .24170 .22280 .19570 19.640 13.31930 -7.67350 -1.31150 .28770 .32750 .32750 .22870 .32750 .22880 .19570 0.28770 .32750 .22280 .19570 0.28770 .32750 .22280 .19570 0.28770 .32750 .22280 .19570 0.28770 .32750 .22280 .19570 0.28770 .32750 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .19530 .22800 .195800 .19580 .22800 .19880 .22800 .19880 .22800 .198800 .22800 .19880 .22800 .19880 .22800 .198800 .22800 .19880 .22800 .19880 .2280		106.	123.640	12,19410	-8.67920	-1,55975	.29650	.05120	02220		
115.640 14.13740 -6.6312092890 .22060 .30996 .115.640 14.75870 -5.6420052389 .18150 .12970 119.760 14.75870 -5.77230 .31620 .22770 .32780 119.640 13.31930 -7.67350 -1.31150 .28770 .32750 .32770 .32770 .32750 .12976			119,650	13,39819	-7,79699	-1,39769	.28285	,33420	00230		
111.670 14.67980 -5.6420052380 .18150 .12975 199.760 14.75870 -5.7723031625 .24170 .22285 119.640 13.31930 -7.67350 -1.31150 .24170 .22285 19.640 13.31930 -7.67350 -1.31150 .24770 .32750 .22285 .24770 .32770 .32750 .22285 .16587081570011702556 .22285 .15587155871511702556 .22285 .15287 -1.6117 -1.02556 .22285 .15287 -2.69780 .2.20780 .2380019530 .127.720 13.91170 -2.29780 -2.20780 .2328015650 .19530 .227725 15.10260 -1.47910 .2682013645 .10570 16.92220 -1.47910 .2682007165 .10570 16.92220 -1.4149 -1.21890 .2683007165 .10580 .19570 -1.21860 .2571002250 .103350 .19570 -1.21860 .2571002250 .103850 .1958078670 -1.21870 .2571002250 .10580 .2721002250 .2721000976 .228000997600976		106	115.640	14,13740	-6.63120	-,92899	.22060	36608.	01350		
THOUSED 14.75870 -5.7723031625 .24170 .222855 119.640 13.31930 -7.67359 -1.31159 .28770 .32755		156	111.670	14.67980	-5.64299	52380	.18150	.12970	.09480		
GRADIENT22088167350 -1.31159 .28770 .32750 .28740 .32750 .28740 .32750 .28740 .2208816587081575011702056 .22088 .16587081575011702056 .28780 .23800 .19590 .19590 .2580019530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19530 .25800 .19590 .28820 .28820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19600 .29820 .19820 .28820 .28820 .08820 .19820 .28820 .28820 .28820 .08820 .28820 .		196	109,760	14,75870	-5,77239-	31629	.24170	.22285	. 96449		
GRADIENT2208815587081570511702556  LEGALIENT2208815587081570511702556  ALPHA CNH CLMH CA CYM CYNM  129.620 13.25750 -2.69760 -2.20760 .2360019530  LEZ.726 13.9170 -2.1970 -2.07590 .2520017500  LEZ.725 15.10260 -1.47510 -1.79190 .2659017600  LEZ.725 15.10260 -1.47510 -1.79190 .2659007160  LEZ.726 15.10260 -1.47510 -1.21560 .2659002410  LEZ.727 15.727 15.95500665790 .2571002130  LEZ.727 15.9560079679 1.5559000390		106	119,640	13,31930	-7,67359	-1.31150	.28770	.32750	95249		
ALM NO. 176/ 0 RN/L = 6.75 GRADIENT INTERVAL = -5.00/ 5.00  ALPHA CLM CLMH CA CYM CYNM 129.620 13.25750 -2.69780 -2.20780 .2360019530  127.720 13.9170 -2.21970 -2.07590 .2260013640  123.725 15.10260 -1.47510 -1.79190 .2662013640  119.715 16.66770 -1.02160 -1.56220 .2653007160  111.730 16.922014140 -1.21850 .2678002410  111.730 17.71750 .9553066220 .2576001355  119.640 10.04770 1.5559068790 .2571002550  119.720 15.9560579675 -1.54790 .2771004510			GRADIENT	22588	15587	98157	55117	02956	00135		
ALPHA CNH CLMH CLMH CA CYN CYNH CYNH 129,620 13,23570 -2,69760 -2,20760 .2360019530 127,720 13,9170 -2,1970 -2,07590 .2520017600 123,725 15,10260 -1,47010 -1,79190 .2659007160 115,700 16,9220 -1,02160 -1,26220 .2663007160 115,700 16,9220 -1,4440 -1,21680 .2646002410 115,700 16,9220 -1,5620 .26490 .264002410 111,730 17,71750 .995030662790 .2571001330 119,720 15,9560079670 -1,54790 .257100245002450 119,720 15,9560079670064790 .277100451004510		RUN	176/	0		RADIENT INTE		.00/ 5.00			
# 129,620 13,25750 -2.69780 -2.20780 .2380019530		272	AH PHA	3	¥.	5	ž	CYNM	Ę		
123.726 13.9170 -2.21970 -2.07590 .2520017600 123.726 15.10260 -1.47010 -1.79190 .2692013640 119.710 16.06770 -1.02160 -1.58220 .2663007160 115.700 16.9252014140 -1.21580 .2646002410 111.730 17.71750 .9553066220 .2576001330 119.840 16.04770 1.5559066720 .257100210 119.840 16.04770 1.5559066720 .2571004510 119.720 15.5550079679 .272100451000976			120 620	13.25750	-2.69780	-2,20760	.23600	19530	.01630		
123.725 15.10269 -1.47010 -1.79190 .2692013640 119.715 16.06779 -1.02160 -1.56220 .2663007169 115.700 16.9252014140 -1.21580 .2646002410 111.730 17.7759 .9503986220 .2578001330 119.720 16.04770 1.5559066790 .2571502150 119.720 15.9560079675 -1.54799 .2721904510		961.1	127.720	13.91170	-2,21970	-2.07590	.25200	17600	. 02390		
119.710 16.66770 -1.02160 -1.56220 .2663007160 115.710 16.9252014140 -1.21580 .2646002410 111.730 17.7750 .9503086220 .2578001330 109.840 18.04770 1.5559068790 .2571002150 119.720 15.9560079670 -1.54790 .2721004510 68801ENT2393520452076040006100976		907	123.726	15,10269	-1.47910	-1.79190	.26929	13640	. 05790		
115.700 16.9252014140 -1.21580 .2646002410 115.700 17.7750 .9503086220 .2576001330 109.840 10.04770 1.5559066790 .2571002150 119.720 15.9560079670 -1.54790 .2721004510 6.047079670076040006100976		201.1	110.717	16.56779	-1.02160	-1.56220	.26630	07169	60065		
111.750 17.7750 .9503086220 .2576001330 109.840 10.04770 1.5559066790 .2571002150 119.720 15.9560079670 -1.54790 .2721004510 2260100976		961.1	115.10	16.92520	14140	-1.21580	.26460	02410	.01530		
119-040 10.04770 1.5559068790 .2571002150 119-040 10.0560079670 -1.54790 .2721004510 cealitem2393520452076040006100976		1.196	DD - C11	17 71750	05039	86220	.25789	01330	. 00339		
119.720 15.9560079670 -1.54790 .2721004510 cealitem2393520452076040006100976		1.195	100 040	10.04779	1.55590	-,68790	.25719		.01220		
GEADTENT2393520452076940096100976		361.1	119.720	15,95600	27967	-1.54799	.27219		-, 06629		
		1.196	CRADIENT	23935	20452	67694	69961		.00055		

SREF = LREF = BREF = SCALE =

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(R914H1) ( 28 NOV 73	**
	ATAN TINTERIOR
MSFC 578(SAIDF) 142-IN SRB (139) NBE4	

.8030 Se. IN										
	XMRP		5.5570 IN.				BETA =	88 C	PHI =	000.
	YMRP		.0000 IN.				ATHENG =	195	ATHS =	000
	ZMEP		NI GGGG				CONFIG =	4.999	SHDSTK =	. 909
_	SUN NO	RUN NO. 146/ 0	0 RN/L =	7.12	GRADIENT INTERVAL =		-5.00/ 5.00			
2		AHG IA	CNK	Ŧ		T.	CYNM	GBL GBL		
1 A C		129.750	12,38510	1,15860	1 -2.12470	.28160	. 54320	.01620		
1.04		127 870	13,92899	1.59940		.29085	.04390	.01349		
10.1		124 960	14.36190	2,45940		.31600	.06640	.00790		
70.		100.021	14,57730	2.66490		.32800	.07870	.01080		
, .		113.000	16.53810	3,3418		.32170	. 19690	. 62119		
1.340		70.011	06702.21	3.51845		.32259	.19475	. 95659		
		111.00	17 05861	4, 1699		.31490	.13690	. 02470		
1.945		D16-651	14 28670	3.1413(		.30310	.11595	. 02640		
F	49	RADIENT	-,28346	13452		05170	-, 06431	00023		
	RCK K	RUN NO. 157/ G	0 RN/L =	6.94	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	00' 2'00			
7,742	_	AH OHA	Control	¥ J	ð	£	CYNM	9		
		120 040	11.44720	2.1233		.25890	.07810	. 04260		
		100 000	12.08550	2,3161		.26419	.08579	. 53950		
		120.21	13.25420	2,7783		.26229	08680.	.03500		
		500 000	14 42476	3,2093	0 -1.33970	.27529	. 09950	. 03360		
7		200.031	15 54469	3.6369		.26270	. 08330	. 04589		
		0.5.5.1	16.48210	4.1431		.27360	00260.	.04970		
0.4. N		110.076	16.89000	4.39349		.27769	.09550	.05670		
			14.45699	3,1988	•	.27165	. 09960	. 53860		
		COSTOR	- 27495	11343		09976	-, 09957	69574		

SCALE 8 13023 848 114 7849 2 5.15571 114. C4. 14. 201 114. C 11 MOV 73 1. 1 MO	CATE 19 AUG 74			TABULA	TABULATED SOURCE DATA.	: DATA, MSF	MSFC TUT 578				PAGE	67 39
### ### = 3,377 BH.  ### = 1,090 PH.  ##				ИЗЕС	578 (SA10F	7) 142-IN SA	18 (139) NBE4			(R914		0 27 VO
Company   Comp		REFERENCE	DATA				٠			PARAMETRI	C DATA	
## 1.000 14. TWEP =TOUG IN.  ## 1.000 15. TWEP =TOUG IN.				,	21 CC3					000		000.
Control   Cont	н	.5030 59.		n H 1	מונה מונה				×	. 500	AFTSTK =	000
Fig. 10056  Fig. 1	.,	.6555 1N.		, ,	וממה דא.					.109		000.
NA. 16, 0 RN/L = 4.95 GRADIENT INTERVAL = -5.00, 5.00  ALTHA CNM CLIMM CL C C C C C C C C C C C C C C C C C	II II	. 5556 . 5556	i i	,						4.000		.000
170,016   1.9120   -1.6590   -1.60760   .02190   -0.0690   -0.0690			<b>3</b> 5				LADIENT INTE					
M.C.					3	3	5	CYN	CYN	ອ		
166.060 1.79910 1.47100 1.69290 .0299007270 166.060 1.79910 1.47100 1.69290 .0228009660 1.99779 2.14710 2.14710 2.166900761003760 1.99779 2.54720 2.24220 2.266800761013760 1.99.960 1.99779 2.54710 2.37240166900761013760 1.99.960 1.99779 2.57710 2.37240 2.37240137401374013740 1.99.960 1.99.960 1.99.960 1.99.960 2.72590 2.14960 2.2492025860037401374013740 1.99.960 1.99.960 1.99.960 1.99.960 2.7259 2.24800 2.24950 2.24800 2.24950 2.24800 2.24950 2.24950 2.24800 2.24950			MACH	ACTER		1,16590	-1.80760	.02190	06690	.00710		
119.960 1.31520 -1.91620 -2.0520 -02260 -09660 -0159.00 1.3150 1.99.960 1.90770 -2.14700 -2.16690 -0.04950 -0.13760 -0.139.960 1.90770 -2.14700 -2.26600 -0.04950 -0.13760 -0.139.960 1.90770 -2.42120 -2.26600 -0.04950 -0.13760 -0.139.960 1.90770 -2.42120 -2.39220 -0.25580 -0.62690 -0.62690 1.99.960 1.89420 -2.14960 -2.39220 -0.25580 -0.62690 -0.159.900 -2.14960 -2.14960 -2.16940 -0.103740 -0.15340 -0.159.900 -2.14960 -2.14960 -0.103740 -0.15340 -0.159.900 -0.149.900 -2.14960 -0.13740 -0.13740 -0.13740 -0.13750 -0.13740 -			BBC .	00001	00000	-1.47180	-1.69290	.02090	57279	.01550		
119.960 1.13760 -2.14700 -2.166900495013760135.870 2.59740 -2.42120 -2.26680076102193021930 1919.860 1.99770 2.42120 -2.26680076102193022580 1919.860 1919.8			660.	166.009	14480	1.91620	-2.05329	02280	09680	.00660		
153.870			666.	104.040	1.31320	-2.14799	-2.16690	04950	13769	.01940		
151.770			660	109.900	2 59740	-2.42120	-2.26680	07619	21930	-, 90119		
149.040			,	133.679	42440	-2.57170	-2.35240	18945	62690	.00340		
159.960			55. 1	010.161	51474 F	2 71560	20.3990	25580	86870	06900.		
March   Marc	٠		. 599	149.840	3.69619	20011-2-	-2.16540	93749	15340	.00530		
ALPHA CNM CLMM CA CTM CYM CYNM 5 170.010 .7252031000 -2.04910 .01510 .03980 5 168.000 .9704052600 -2.153900329004660 5 159.750 2.24800 -1.97840 -2.635500552011360 6 159.750 3.06250 -2.54020 -2.635601165031750 6 159.740 2.27970 -1.9780 -2.652605552064900 6 159.740 2.27970 -1.9800 -2.652605562050340 6 159.740 2.27970 -1.9800 -2.652605562021960 6 159.740 C.7404 CLMH CA CYM CYM CYNM ALPHA CNM CLMH CA CYM CYM CYNM ALPHA CNM CLMH CA CYNM ALPHA CNM CA CHMH CA CONSOLO115500 -1150.400 5-91050115909105909115909 -1150.500115909115909115909 -1150.500115909115909115909 -1150.50011500011500115000 -1150.500115000115000115000 -1150.5000115000115000115000 -1150.5000115000115000115000 -1			£50.	199.961	16222	17204	.02869	.01260	.03545	.00936		
ALPHA CNM CLMM CA CYM CYM  170.010 .7252031900 -2.04910 .01510 .00980  5 166.000 .9704052600 -2.553500520004660  5 163.600 1.60460 -1.36210 -2.5535009520113201132021710217			2			6.22	RADIENT INTE		.00/ 5.00			
170.010			2743	AI PWA	3	3	ಶ	C	CYNM	GBL		
166.000 .9704052600 -2.153900052004660 163.880 1.60460 -1.36216 -2.353500952011320 159.750 2.24800 -1.97840 -2.481301111021710 155.570 3.06250 -2.54020 -2.613601165033750 151.380 4.04990 -3.38650 -2.650601165033750 149.360 4.66260 -3.93970 -2.652603562064900 159.740 2.27970 -1.98030 -2.496201035021960 6RADIENT18746 .17083 .02242 .01527 .03046  ALPHA CNM CLMM CLMM CA CYM CYM CYM CYM 169.8200972009720 167.610 1.24080 -2.61260 -2.9730022800520015560 159.670 1.24060 -2.97300228015560 159.670 4.04570 -2.975300228015560 159.670 4.04570 -2.9730002203562036930 150.750 150.7501556015560 150.750 150			900	120 010	72520	31900	-2.04910	.01510	. 03080	.00200		
163.860 1.60460 -1.3621G -2.353500952Q1132Q 159.75G 2.246GG -1.9784Q -2.4813G1111Q2171Q 155.57G 3.0625Q -2.5402Q -2.6136G1165Q3375G 151.38G 4.0499G -3.3585Q -2.6936G1155Q5375G 159.74G 2.2797G -2.6526G -3.595GQ5934G5934G 159.74G 2.2797G -1.9803G -2.4962G3562G6490G 159.74G 2.2797G -1.9803G -2.4962G1035G6490G GRADIENT INTERVAL = -5.007 5.0G GRADIENT INTERVAL = -5.007 5.0G 169.82G -9.888G -1.6401G -2.9241G -0.0244G0972G -0.056GG 159.40G -2.9354G -2.9753G -0.0224G1556G -0.0576G 159.40G 2.9354G -2.9753G -0.0224G -0.0576G -0.1556G 159.40G 2.9354G -3.6126G -2.9873G -0.0622G -0.5596G 155.09G 4.3453G -4.0577G -2.9723G -0.0622G -0.5596G 155.40G 2.9462G -3.6126G -2.1733G -0.0622G -0.3595G 155.40G 2.9462G -3.6126G -2.1733G -0.0632G -0.1667G 159.40G 2.9462G -3.6126G -3.1271G -0.0533G -0.0633G -0.0371 -0.0332			96	168.000	97940	-,52600	-2.15390	-, 02290	04660	.00740		
159.750 2.24800 -1.97840 -2.481301111021710 155.570 3.06250 -2.54020 -2.650501165033750 151.380 4.04990 -3.35850 -2.650601165033750 149.360 4.66260 -3.93970 -2.652603596064900 159.440 2.27970 -1.98080 -2.496201035021960 6.64900 159.440 2.27970 -1.98080 -2.49620 -1.035021960 169.820 3.98880 -1.64010 -2.924100284003720 165.670 1.24080 -2.62770 -2.975300218005700 159.400 2.93949 -3.61280 -2.975300228015580 150.790 4.34630 -3.61280 -2.037201733015580 150.790 4.34630 -4.04570 -3.034201733026950 150.400 2.94620 -3.612800628016670 159.400 2.94620 -3.612800633016670 159.400 2.94620 -3.612800633016670 159.400 2.94620 -3.61290 -3.03975 .00371 .01332			968	163.880	1.60460	-1,36210	-2,35350	09520	11329	00700		
155.570 3.06250 -2.54020 -2.603601165033750 151.360 4.04990 -3.35650 -2.636302596050340 149.360 4.66260 -3.93970 -2.652603552064900 6RADIENT18746 .17083 .022651035021960 6RADIENT18746 .17083 .022621035021960 6RADIENT INTERVAL = -5.007 5.00 1659.820 3.98860 -1.64010 -2.92410022800370 1659.820 3.9400 -2.04570 -2.975300228007500 1659.400 2.93409 -3.61280 -2.97300622036960 1550.00 4.34030 -4.0570 -3.094201733092010 150.400 2.91059 -4.17710 -3.122900693016670 159.400 2.94620 -4.17710 -3.122900693016670 159.400 2.94620 -3.61260 -3.123000633016670 159.400 2.94620 -3.61260 -3.123000633016670 159.400 2.94620 -3.61260 -3.12710 -0.0371 .01332			968	159.750	2.24890	-1.97849	-2.48135	11110	21710	.00780		
151.360 4.04990 -3.35650 -2.638302596050340 149.360 4.66260 -3.93970 -2.652603562064900 159.740 2.27970 -1.98080 -2.496201035021960 6RADIENT18746 .17083 .02925 .01527 .03046 6RADIENT INTERVAL = -5.00/ 5.00 I67.810 1.24080 -1.64010 -2.9241002284003720 167.810 1.24080 -1.64010 -2.9241002284003720 163.670 1.54090 -2.92710 -2.927300130015580 159.400 2.93940 -3.61280 -3.032900622035960 150.700 4.34530 -4.17710 -3.129001733020910 150.400 2.94050 -3.12900173300609021850 150.400 2.94620 -3.12909 -3.127100609021850 159.400 2.94620 -3.12909 -3.0371000371 .01332			969.	155.570	3.06250	-2,54020	-2.60360	11650	33750	.00610		
149.360 4.66260 -3.93970 -2.652603562064900 159.740 2.27970 -1.98080 -2.496201035021960 6RADIENT18746 .17083 .02925 .01527 .03046 7.030			966	151.369	4.04995	-3,35850	-2,63830	25960	50340	.00320		
159.740 2.27970 -1.98080 -2.496201035021960 GRADIENT1876 .17083 .02925 .01527 .03046			969.	149.360	4.66260	-3.93970	-2.65260	35620	64900	.00000		
GRADIENT18746 .17083 .02925 .01527 .03046  NNO. 18/ 0 RN/L = 6.65 GRADIENT INTERVAL = -5.00/ 5.00  ALPHA CAM CLAM CA CYM CYNM 169.820 .30880 -1.64010 -2.975300284009720 167.00 163.670 1.24070 -2.81260 -2.975300218007500 159.400 2.99540 -3.61260 -2.975300130015800 159.400 2.99540 -3.61260 3.09201580015800 159.700 4.34030 -3.029300622036960 159.700 3.1050 4.1710 -3.132900609021850 150.700 5.91050 4.1710 -3.132900609021850 159.400 2.94620 -3.61950 -3.127100583016670 159.400 2.94620 -3.61950 -3.037100742034550 -003371 .01332			968	159.740	2.27970	-1.98089	-2.49620	-,19359	21960	.05789		
ALPHA CAM CLAM CA CYM CYNM 169.820 .98880 -1.64010 -2.924100284009720 167.810 1.24080 -2.03770 -2.975300738007500 163.670 1.94070 -2.05770 -2.975300738005580 159.400 2.93949 -3.61280 -3.029300822035960 159.400 2.93949 -3.61280 -3.032901733032690 150.700 6.54990 -4.17710 -3.132900609021850 159.400 2.94620 -3.61950 -3.034000633016670 159.401 2.94620 -3.61950 -3.034000742034550				GRADIENT	18746	.17083	. 52925	.01527	.03046	. 00999		
ALPHA CNM CLMM CA CYM CYNM CYNM 169.82G9886164010 -2.9241G0284G0972G65.67G 1.2408G2.9753G0218G0972G155.67G 1.240762.9753G0218G155.8G 159.40G 4.340762.9753G0822G155.8G 155.49G 4.3405G2.9873G0822G3696G 155.76G 5.9105G1771G3.925G1733G2.95G2.85G 148.73G 6.6049G4.1771G3.1329G0609G2185G 159.40G 2.9462G3.855G053711867G1867G1867G1867G1867G1867G2.9462G2.995G1867			2			6.65	RADIENT INT	ERVAL = -5	.007 5.00			
169.820 .98880 -1.64010 -2.924100284009720057610 163.670 1.24080 -2.05770 -2.97530021800550005500 163.670 1.94076 -2.98730021800558005580 159.405 2.93949 -3.61280 -3.029301733092010 150.700 6.9140 -4.17710 -3.192901733092010 146.730 6.64990 -4.17710 -3.132900609021850 159.400 2.94620 -3.61950 -3.034000742034500 6.8490 -2.70690 -3.0371053300533034500			MACH	AH PHA	Š	CLI	ð	CYM	CYNM	e E		
167.61G 1.24080 -2.05770 -2.975300218G075001558G 159.67G 1.94070 -2.8126G -2.9673G013GG1558G 159.40G 2.93949 -3.6126G -3.0293G0622G3696936960 155.09G 4.3403G -4.04570 -3.0942G1733G9201B 150.78G 5.91059 -4.1771G -3.1329G0609G2185G 148.73G 6.6049G -4.1771G -3.1329G0609G2185G 159.40G 2.9462G -3.6195G -3.1271G0583G1867G 6.6049G -2.2069G -3.0345G0742G345GG 6.332G1867G 6.3069G -3.0371 .01332			1.202	169.820	.98880	-1.64010	-2.92410	52840	09720	00160		
163.670 1.94070 -2.81260 -2.967300130015580 - 159.400 2.93940 -3.61260 -3.029300622036960 - 155.090 4.34030 -4.04570 -3.094201733092010 150.780 5.91050 -4.17710 -3.132900609021850 148.730 6.60490 -4.17710 -3.132900609021850 159.400 2.94620 -3.61950 -3.127100583018670 6.8040127069 -3.034500742034500			1.262	167.810	1,24585	-2.05770	-2.97530	62180	07500	-, 05706		•
159,400 2,93940 -3,61280 -3,029300822036960155,090 4,34030 -4,04570 -3,094201733092010 150,780 5,91050 -4,17710 -3,132900609021850 148,730 6,60490 -4,38550 -3,127100583018670 159,400 2,94620 -3,61950 -3,034000742034500 64,0051127069 .12909 .09975 .00371 .01332			1.202	163,670	1.94575	-2.81280	-2.98730	01300	15580	99946		
155.090 4.34030 -4.04570 -3.094201733092010 150.780 5.91050 -4.17710 -3.132900609021850 148.730 6.60490 -4.38550 -3.127100583018670 159.400 2.94620 -3.61950 -3.034000742034500 6RADIENT27069 .12909 .00975 .00371 .01332			200	159.400	2.93940	-3,61280		08220	~.36960	•		
155.760 5.91050 -4.17710 -3.132900609021850 148.750 6.60490 -4.38550 -3.127100583018670 159.400 2.94620 -3.61950 -3.034000742034500 -6.4001ENT27069 .12909 .09975 .00371 .01332 -			1.202	155,090	4.34535	-4.04570		17330	-,92010			
148,730 6,60490 -4,38550 -3,12710 -,05850 -,18670 159,400 2,94620 -3,61950 -3,03400 -,07420 -,34500 - 6RADIENT -,27069 ,12909 ,09975 ,00371 ,01332 -			1.202	150,780	5.91050	-4.17710		06090	21850		_	
159.400 2.94620 -3.61950 -3.034000742034500 Gradient27069 .12909 .00975 .00371 .01332			202	148,730	6,69499	-4.38550		05830	18670	.00510		
GRADIENT27069 .00975 .00371 .01332			1.202	159,405	2,94629	·		67420	•	00110		
•			•	GRADIENT	27069			.00371		00044	_	

SREF = LREF = BREF = SCALE =

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J
(R914J1)

			<b>.</b>	ASFC SI	r8 (SA10F)	142-IN SE	MSFC 578 (SAIDF) 142-IN SRB (139) NBE4			(R914J1)	1) ( 91 NOV 73	. ( 87 )
REFERENCE DATA	E DATA									PARAMETRIC DATA	DATA	
.5030 SQ. .6050 IN. .8500 IN.	Z	XMRP :: YMRP :: ZMRP ::	44 11 14	5.5570 IN. .0000 IN.	.5570 IN. .5050 IN.				BETA = FWDSTK = ATHRNG = CONFIG =	.000 .000 .100 4.000	PHI . = AFTSTK = ATTHS = SHDSTK =	000.
	P.	RUN NO.		0 /19	RN/L =	6.96 GR	GRADIENT INTERVAL =	RVAL = -5.	-5.00/ 5.00			
	2742	•	AN PWA		X.	<b>E</b>	<b>5</b>	CYN	CYNM	g g		
	1.962	` <b>X</b>	169.879		.78990	-1.31180	-3,00810	.00390	.07950	.00000		
	1.962		167.829	•	12050	-1.60940	-3,00080	00770	06149	. 99999		
	962	. =	163.630	••	2, 09390	-1.98920	-3.03570	01729	. 58045	. 55050		
	96.	. =	159.350		35020	-1.69329	-3,19999	.12860	04319	.00000		
	1 967	-	155.080	•	72020	-1.00490	-3,15965	00690	-,20620	. 00000		
	. 063		150 940		5.14669	-,07759	-3.17610	.00729	.12489	. 00000		
		i 2	200 071		6.67489	-,31520	-3,19520	01490	.05470	. 96999		
	106.1	. =	159.380		31356	-1.51600	-3.55975	.03359	02600	. 00000		
		Ŗ	RADIENT	•	-,28799	96894	.00991	.00007	-, 00062 ;	. 00000		
	3	RUN NO.		74/ 0	RN/L =	7.00 68	GRADIENT INTERVAL = -5.00/ 5.00	ERVAL = -5.	00' \$ '00			
	2		AND IA		3	3	ฮ	Š	CYNM	9		
	# 479	-	ואה ההח		.62580	49089	-2,89250	06650.	.01920	. 00000		
		• ÷	160 020		05490	39870	-2.92800	.00690	.04360	.00000		
		• •	100.000		70000	17819	-2.97649	.01300	.01030	.00000		
	614.0	• •	107.303		50540	10660	-3.00150	.01370	. 99179	.00000		
		• •	INS REA		66860	.41129	-3.05390	. 00960	01769	.00000		
			700.00		90440	64339	-2.68660	.05469	.03920	. 55500		
			2011	•	2 4694G	.03410	-2,79965	. 00000	. 92250	.00000		
	6.4.4		150 820	•	59680	15430	-3,00179	.05460	.00920	. 00000		
		Ĭ	RADIENT		-,23795	02809	-,00962	.00037	. 60031	.00000		

CATE 19 AUG 74	<b>2</b>		TABULA	TABULATED SOURCE DATA,		MSFC TUT 578				PAGE	3
			MSFC	578 (SA10F)	142-IN SEB	MSFC 578 (SAIOF) 142-IN SRB (139) NBES			(R91581)	(1) ( 01 NOV 73	٠
	PEFEENCE	EENCE DATA							PARAMETRIC DATA	: DATA	
		IN XMRP	u	5.5578 IN.					. 500	PHI =	000.
	ž:			.0000 IN.				FWDSTK =	100		000
BREF = SCALE =	.6555 IN.	3HL7						CONF16 =	5.000	SHDSTK =	500.
		RUN NO.	NO. 41/ 6	RN/L =	5.06 GRA	GRADIENT INTERVAL =	AAL = -5.00/	00' 8'00			
		•	4110	į	3	5	£	CYNM	Э Э		
		MACH	ALTAA 9 945	.97850	.45360	1.03789	.02720	.12970	.01120		
		. 40 A	11.925	1.17259	.65170	1.04530	.08270	06590	-,01229		
			15.960	1.72640	1.29370	1.04889	.43400	73350	. 99500		
		665.	20.030	2.36239	2.14510	1.05000	.87336	-1.37270	08510.		
		.599	24.159	3.57739	3,14970	.98330	1.21490	-1.76140	01020		
		. 599	26.249	3.82490	4.37250	.93975	1.27190	06922.1-	. 00400		
		.599	30,160	4.19730	4.85960	08888.	1.24099	42690	0.0000		
	•	. 599	20.030	2.35750	2.97640	1.04729	. 66630	08420	0.000		
		-	GRADIENT	.16192	.22236	00572	97/96	- 00106			
		RUN NO.	NO. 42/ 0	D RN/L =	6.38 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		3	AI DUA	¥	20	5	CYM	CYNM	9		
			200	1-09190	-,01700	1,27350	.02230	.17100	.05770		
		20 G	066.11	1.35680	.16550	1.28250	.01630	.11470	.05820		
		500	16.090	1.99990	.76470	1.26410	.47390	08669	.00790		
		500	20.240	2,73940	1.98775	1.24510	.38490	25690	.00080		
		506	24.440	3,53960	3,63110	1.18295	.87079	87860	. 05400		
		200	26.690	4.44589	5.99690	1.07260	.59710	-,29450	.01440		
		908	39.660	5.04390	7.02020	1,05790	.62020	.40569	.01490		
		.905	20,230	2.73216	2,00480	1.22960	.43769	0.525	acono.		
			GRADIENT	.18834	.34420	01117	.03269	01.566	egen.		
		5	RUN NO. 43/ 0	0 RN/L =	6.79	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	00' 8'00'			
		3	77077	3	¥	ర	CYN	CYNH	g B		
		- 400	10.00	1.17050	63160	1.79350	.03610	05850	.00470		
		261-1	12,119	1,44430	1.14969	1.80110	.19440	12930	.01040		
		1.196	16.270	2,09200	2,53630	1.77499	.28925	45320	.01580		
		1.198	29,540	3.04450	4.55460	1,71210	.29250	38830	. 00670		
		1.198	24.860	4.25450	6.39720	1.62090	.22350	24310	.01449		
		1.196	29.230	5.61520	6.19895	1,57930	.26880	.03490	.01280		
		1.196	31.270	6.67270	6.94380	1.56529	.17719	. 57998	08000.		,
		1.198	29.549	3.05799	4.53199	1.71190	.29620	37180	10000 -		
			GRADIENT	.25784	.40466	01222	. 69634	. 1021501	; ;		

(R915B1) ( G1 NOV 73 )

SREF = LREF = BREF = SCALE =

REFERENCE DATA	E DAT	<b>4</b>						-	PARAMETRIC DATA	DATA	
.8050 Se. .8050 TN. .8050 S.	<b>z</b>	XMRP THRP ZHRP	un 18 - 18 - 18	5.5575 IN. .0000 IN. .0050 IN.	,			BETA = FUDSTK = ATHRNG = CONFIG =	. 000 . 000 . 100 5. 000	PHI = AFTSTK = ATTS = SMDSTK =	000.
		RCN N	NO. 59/ fl	. 0 RN/L =	6.98 68	GRADIENT INTERVAL = -5.86/ 5.80	VAL = -5.1	96/ 5.00			
	7	<b>,</b>	AI PWA	Š	¥.	5	CYH	CYNIM	CBL		
	-		19.290	1.16860	1.67820	1,23469	. 92469	.05289	00000		
		. 952	12.25	1,52310	2,57590	1,23149	. 54090	01910	. 00000		
		25	16.495	2,55300	3.96375	1.18810	.07070	-, 08479	. 00000		
		952	20.790	3,93600	4.59825	1.19290	.06675	54990	. 00000		
	-	. 25	25.150	5.49350	5.26580	1.25690	.04230	. 12699	. 99999		
		650	29.460	7,14769	5,39819	1.28325	.03719	.35479	. 05000		
		960	31.470	7.91370	5,28560	1.27865	.03490	.24709	.09809		
		660	20.790	3,94685	4.54338	1.14310	. 08545	. 99239	. 00999		
	:	9	RADIENT	.32273	.15843	.05296	-, 99512	.01532	. 90656		
		2	RUN NO. 62/ 0	/ 0 RN/L =	7.01 68	GRADIENT INTERVAL = -5.00/ 5.00	₹ 5.	00/ 5.00			
	Ž	7	AHQ IA	3	O.	ð	£	CYNM	ᅙ		
		1 470	19.149	•	1.69806	.82350	.01329	. 53550	. 05598		
		. 62	12,120		1.97520	. 62689	00130	.04519	.00000		
	,	2	16.190	2,77520	2.69170	.87050	01236	.02740	.00000		
		2	20,340		1,95540	.97629	. 99859	. 02620	.00000		
		623	24.590		1.93540	1.09530	.00729	. 54375	.00000		
			28.680	_	2,09800	1.20769	.09720	. 96799	. 09909		
		6.77	39,629	7,12019	2.21730	1,25529	.05469	. 96369	.00000		
	,	. 62	29.349		1.94650	.99749	. 01199	.03360	. 50555		
	•	Ū	RADIENT		.01065	.02218	. 50017	.05167	. 66669		

1 578
MSFC TUT
SOURCE DATA,
TABULATED S

PAGE 53

	(R315D1) ( 01 NOV 72	PARAMETRIC DATA	BETA = .000 PHI = FUDSTK = .000 AFTSTK = ATHRNC = .100 ATHS = CONFIG = 5.000 SHOSTK =
TABULATED SOURCE DATA, MSFC TUT 578	MSFC 578 (SAIOF) 142-IN SRB (139) NBES		5,5576 IN. .0000 IN. .0000 IN.
DATE 19 AUG 74		REFERENCE DATA	SREF = .5930 SQ. IN XMRP = LREF = .6950 IN. YMRP = SCALE = .0956

200.

6.77510 .377 9.65960 .269 11.06190 .109 12.12090021 12.3937025 12.5772025 12.5772025 12.5772025 12.5772025 14.14560 .49 14.14560 .49 14.14560 .49 14.14560 .49 15.77339 .12	6.77510 .3794066630 9.6566 .2006020060 11.06190 .1060025610 12.3572017520 .36680 12.577202579010480 12.577202579001340 12.577202579001340 12.5772002579002590 12.5772003264 .02713 4.4456003264 .02713 14.445604949003100 14.445604949005100 15.37739 12.2760 15.27390 15.27330 12.20500 15.7733021320 12.3520 15.20500 15.3733021320 12.3120	CA .37940 .10600 .106000295025110251300328403284032840328403284032863300012860
	CTM6663025610 55025610 55025610 5700360 1101060 1101060 1101060 1101060 1101060 10390 5600390 5700390 5700310 5702500 5802500	CYM CYNM 66630 -1.96350  55025815 -1.87860  55025815 -1.87860  55025815 -1.87860  55025815 -1.95850  55010880 -2.12490  1NTERVAL = -5.00/ 5.00  1NTERVAL = -5.00/ 5.00  CYM CYNM  CYM CYNM  49003000 .39150  57022140 .12490  72022140 .12490  72025620 .18990  72025620 .18990

202	ġ	197/ U		RN/L =	6.63	GRADIENT INT	INTERVAL = -5.00/	00/ 5.00	
	á	_		3	2			CYNM	9
	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	5	` \$	25.86.0	10.5780			08748	.60740
1.130			: :	07400	10.0286			11390	.00620
1.19				26.03.0	11.8862			09079	. 91170
1.190			•	24720	13.0326			15939	. 02679
1.196		2 6		94420	13,1306			-,12619	. 54919
201	•	9	=	60569	12.4924			01190	. 92499
196	20.	9	19	11070	11.6579			06439	.00590
1.196	69.589	26.0	11	17,20740	12,68650	0 .93720	-,35320	16390	. 01860
	GRADI	E	-	.24545	.9791			.00249	.05368

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MSFC 578 (SA19F) 142-IN SRB (139) NBES

(R91501) ( 01 NOV 73 )

SKEF = LREF = BKEF = SCALE =

REFERENCE DATA	CE DA1	₹							PARAMETRIC DATA	DATA		
	2	2	•	1.5576 TM.				BETA =	.000	PHI	"	.000
N1 -36 0 000 .	<u>.</u>			.NI 6656				FWDSTK =	. 590	AFTSIK =	#	.000
	•			77 0000				ATHENG =	.199	ATHS	<b>51</b>	.000
. NI 2556.		JAMA2						CONF16 =	5.000	SHDSTK	11	603.
acce.												
		2 25	RUN NO. 138/ 0	/ 0 RN/L =	7.15 GR	GRADIENT INTERVAL = -5.00/ 5.00	1.4L = -5.1	007 5.00				
	1	:	1	į	3	đ	Š	CYNM	9			
	į.	HACH 644	ALTIN		5.30740	1.50170	31146	03850	63126			
		244	47 450		6.46630	1,49029	-,31330	-, 05459	01430			
	; ;	943	56.390	15,77429	7,12250	1.46690	-,33570	-, 06329	92010			
	: .		60.400	16.79320	7,36719	1.42340	-,34100	97410	01480			
		1.94.	64.440	. **	7,77919	1.35570	34520	97820	-, 02549			
	: .	644	S. 500	•	8.91380	1.30660	35330	19149	-, 02759			
	: .	274	70 400	-	8.96290	1.28575	-,34169	69080	-,03719			
	: -	270	60.370	•	6.82450	1.45520	-,31560	. 00480	51510			
	:	_	GRADIENT		13520	-,01129	00183	00379	-, 00052			
		RUN NO.		95/ 0 RN/L =	7,02 64	GRADIENT INTERVAL = -5.09/ 5.00	RVAL = -5.	00/ 5.00				
	•	į	41 044	3	¥	ð	CYM	CYNM	Je)			
	ž ,	FMC7	50,250	-	3,86980	1,65270	-,39616	11760	5399£			
•	<b>1</b>	67.9	52,190	_	4.33919	1.59990	30940	-,13610	-, 03990			
		647	56,189	-	5.25450	1.58250	-,36906	-,14560	03940			
	, pr	617	60.230	-	6.31800	1.54220	29390	12030	02910			
	,	479	64.260	_	7.22680	1,45620	-,29180	13938	02970			
	*	479	68.355	_	7.86169	1.37576	-,28210	14880	08150			
	,,	3.479	70.199	_	8.06770	1.32790	27639	14169	02965			
	•	479	69.239	•	6,31720	1.53869	-,29025	-,11790	03860			
	;	_	GRAD I ENT		.21648	51411	.99162	00107	00054			

HSFC TWT 578
FABULATED SOURCE DATA, MSFC TWT 578
TABUL
19 406 74

PAGE

MSFC 576(SA10F) 142-IN SRB (139) WDE5		N. FUBSTA : FUBSTA : ATHRNG : ATHRNG : CONFIG : A
HSFC 576(4	REFERENCE DATA	.5959 54. IN XMRP # 5.5570 IN8900 IN. YMRP = .0000 IN8000 IN. ZMRP = .0000 IN.
		SCALE ::

H	AI PHA	Š	CLW	5	CYR	CYNM	ฮ
3	An 176	12,01930	9.38610	.56300	04730	47930	.01300
	42 050	12,07990	8,34910	.67370	.13710	.21819	. 92840
	100.00	12 11050	6.49869	.76940	.11170	.66739	-, 00500
	90.00	12 12 12 0	3.90806	06977	. 02350	.59820	. 52220
960	276.60	12 17810	2.53170	.49399	.04650	.54360	. 51855
960	93.909	12 24900	95780	14170	.14039	1.02630	.02140
	200	10 19620	. 25359	02310	.20630	1.09250	.02799
966	20.66	12 10950	4.84160	.72570	-,06330	.79760	.02689
960.	COADTENT	75600	46707	-,03265	.00645	.05850	25000

2	ġ	239/ 0	BRAZE =	6.25	GRADIENT INTERVAL =	RVAL = -5.00/	nn's /01	•
7	4	1	3	3		Ç	CYN	9
				90.000	5728D	3A976	.27430	۳
376.	200	700	10.13410					•
600		250	16.23880	19,21750		39240	.33500	•
100			00000	10000		15760	36720	٦
-942	9	181	10.45630	77066				
600	5	100	16.57289	5.65690		26920	.12490	•
			00963 31	T SETAL		36620	.54969	-
206	,	3	10.05033					•
600	-	066	16,25679	1.8564		-,27399	.258UU	•
	: :		02130	Rezar		28350	31100	•
305	,	2	10.00130	. 106				
600	Š	110	16.49780	5.93160		30690	.18259	•
1	•						45.00	
	COAPT	170	せんりょう	- 5307	•	cccin	30100.	•

R	ġ	256/ B	9	RN/L =	19.9	GRADIENT	INTERV	/\  \	INTERVAL = -5.00/	5.00	
	4	YMO		3	Ī			Ž		CYNH	ฮี
	1 5	3.00		54340	4.9754		02	365		.34910	-, 6002(
		2		70619	5.5024		53.0	.497		.25150	-, 6963
	3	240		1.10350	6.4251		020	.363		.18870	0933(
	7 6	9		39850	7.69641		062	342		.23349	09116
1.13	2 4			19500	9.0754		23.0	.311		.38570	. 00851
61.1	•			3 24749	9.3539		500	308		.40930	.0062
		27.0		16720	9.3543		330	.295		.45510	.05691
		20.00		20.32370	7.52959	0 .82350	000	.31450		.37600	.0136
1:13				03504	2496		562	.005		.00736	0006

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•		999
	PARAMETRIC DATA	.000 PM1 = .000 AFTSTK = .100 ATHS = 5.000 SHCSTK =
		BETA == FWOSTK == ATHRNG == CONFIG ==
MSFC 578(SA1GF) 142-IN 5RB (159) NBES	REFERENCE DATA	SREF = .5930 SQ. IN XMRP = 5.5570 IN. LREF = .6050 IN. RREF = .6050 IN. ZMRP = .0950 IN. SCALE = .0556

5.03
-5.00/
**
RADIENT INTERVAL
7.15
RN/L =
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128/
ģ
RIN NO.
25

9	04420		1,00700	03910	04310	34465	27.000	-, 0254.9	92269	02665	.09098			CBL	03060	03000	0.800	04280	03360	04350	02970	03985	04895	-, 09954
CYNN	05380		-, 94199	59955	13590	-, 12459		06190	05070	11669	. GG56.		-5.00/ 5.00	CYNM	17920		-,17829	14655	12845	-, 12655	-,11655	15585	14455	.05371
CVN	40490	367000	3894D	-,37149	34635	44110		31970	39429	34339	U0457			υ. C	37470		37699	-,35285	32540	-,36755	28269	26519	32976	. 95579
ť		201111	1.12319	.93275	69430	40400		.19926	~, 04739	61069	00130	77000	GRADIENT INTERVAL =	ರ	1 12590	1.15030	1.56650	.93380	.76429	.57659	.35850	.24295	.75610	£4469
3		0.0000	6,74670	A.32655	7.75745			6.14295	5,79689	7.75469		15611	7.03 64	£	A KOKAG	0.000	8.36195	7.98590	7.56229	6.99150	6.29600	5.94515	7,95919	13545
į		19.85573	19,95820	20 64910	20 04640	2000000	19.94.95	19.73555	19,51090	20100		01587	O RN/L =	3	00077	19.14020	19.23510	19.45920	19,46500	19,37360	19.06130	16.86590	19,46925	61142
	ALPHA	80.469	A2.346	06 130		30.300	94.260	98.245	120		3.00	CRADIENT	1 NO. 96/	710 17		65.350	62,195	86.149	90,150	94.150	98.139	100.000	90.169	GRADIENT
į	MACH	1.953	130 -		1.933	1.933	1.953	1.953	200		1.955		NO.	2		3.479	3.479	5.479	474	7 7 7	674	470	47.0	;

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	REFLIENCE	: DATA							PARAMETRIC DATA	: DATA	
	}								•		
	5930 50.	IN XMEP	**	5.5570 IN.					000		9 6
	71 0000			.2555 IN.				FLOSTR =	.000	4	
רוני		: ;		מני שלים				ATHRNG =	.100	ATHS =	.000
BEEF :		JYM2		·ut cece.				CONF.16 =	5.000	SHOSTK =	. 096
SCALE =	.9556								•	1	
		2	RUN NO. 173/ 0	7 0 RN/L =	4.99 GR	GRADIENT INTERVAL =		-5.90/ 5.00			
							;		į		
		MACH	AL PHA	Š	E C	ಶ	¥.				
		284	129, 875	7.81210	-7,93360	-2.33580	1.50360	76820	. 55000		
			127 965	8.33169	-7,15275	-2.21649	1,53240	-1.19470	09439		
			000	A492A	.6.78840	-1.93496	.42760	. 83440	01600.		
			096-631	00000	-6.48A20	-1.72346	.27529	1.52799	98539		
		. 194	nee-ett	•	10101	1 44660	62100	2,51840	95635		
		***	115.940			9550	46750	1 05240	.09650		
		.594	111.940	-	-5.15640	0000011		0.77.0	A1200		
		.594	119.549	-	-4.83469	92699	20675		06700		
		,594	119,955	-	-6.55259	-1.72310	131120	1.44130	00035		
			GRADIENT	19561	11833	07017	662cn •	-,11693	•		
		₹	RUM NO. 172/ 0	/ 0 RN/L =	5	SHADIENI INICKAL -		55.5			
		774	At PHA	NA C	# T	5	E.C.	CYN	ಕ		
		600	129.560	1	-0.53250	-2.37100	.14850	.01770	02400		
			127.669		-8.70979	-2,24790	.21060	. 09469	02390		
			123,640		-8.74710	-2.05520	.28110	.19106	.09040		
		5	119.640		-8.25659	-1.75310	.28570	.25280	00519		
			115.630		-7.39029	-1.29670	23869	.14300	00580		
		-	111.650		-6,65339	85340	.21960	.11159	-, 00630		
		900	109.739		-6.33659	63840	.24340	.22480	00670		
		000	119.630		-6.17569	-1.69670	.26959	.25695	.01129		
		:	GRADIENT		12622	06788	00230	00762	00061		
		2	RUN NO. 171/ 0	./ 0 RN/L =	6.73	GRADIENT INTERVAL =		-5.00/ 5.00			
			411	3	2	5	¥.	CYNN	Ð		
			200	÷	-2.78370	-2.61670	23940	16710	.01119		
			127.710		-2,45970	-2,44570	.26145	14299	. 00890		
					-1.93039	-2,27400	.26270	12910	.01459		
					-1,77169	-1.94270	.24330	07140	.01440		
					-1.02630	-1,85640	.23470	15845	.78430		
					02555	-1.19753	.23879	.11259	. 05349		
					.57460	-1.01339	.23210	.14300	95569		
					-1.58335	-1.93429	.25240	64589	. 51439		

(R915H1) ( 28 NOV 73 )	PARAMETRIC DATA	.000 PHI = .000 .000 AFTSTX = .000 .100 ATHS = .000 5.000 SHOSTX = .000
		BETA = FADSTK = ATHRNG = CONFIG =
MSFC 578(SA1SF) 142-IN SEB (139) NBES		= 5.5570 IN. = .0000 IN. = .0000 IN.
	REFERENCE DATA	.8525 Se. IN XMRT8525 N8525 N8525 Se43MT
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24 90 40 340	z		TABULA	TED SOURCE	tabulated source data, msfC tuf 570	144 578				PAGE	<b>.</b>
			MSFC	578 (SA19F)	142-IN SRI	MSFC STB (SA19F) 142-IN SRB (139) NBES			(891531)	13) ( 81 NOV 73	
	REFERENCE	EMCE DATA							PARAMETRIC DATA	DATA :	
				25 655				DETA E	000	# 1H4	.000
300	.5050 54.		P H 11	.6555 IN.				벋	000.	*	966.
346			#	. 9555 IN.				ATHRMG =	5,000	SMDSTR =	500
scale :	. 9956										
		SUM NO.	NO. 21/ 6	#W/L =	4.92 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		777	71 9117	3		5	£	CTE	ಕ		
			170.059	.63510	-,39890	-2.55340	00300	-, 06550	00330		
		230	166.005	. 83599	68679	-2,61690	00969	07960	.00610		
		585	164.029	1.43760	-1.54920	-2.74029	01740	14750	00110		
		.599	159.959	2.06579	-2.0596¤	-2.63960	53710	15845	99799		
		. 599	155.865	2,73169	-2.35569	-2.87769	07679	61192"-	00000-		
		.533	151.769	3.61349	-2.84850	-2.05690	19860	95160	00150		
		.599	149.635	4. 59445	-3.11720	-2.02219	23329	-1.15748	01690		
		.599	159.950	2.06860	-2.04689	-2.83759	05130	13040	01480		
			GRADIENT	16967	.13549	.01409	.01109	.05022	. 55566		
		2	RUM NO. 20/ 0	S ENA =	6.22 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		7	7110	į	3	ð	E	CTA	ಕ		
			170 020	73020	33150	-2.61410	.03219	.00950	.01020		
			0 0 0 mm	47500	1.0672	-2.68160	.01350	01999	. 90030		
			163.010	1.64590	-,57530	-3.04430	09750	05940	50030		
		è	159.750	2.21510	-1.66709	-3.15465	13860	07469	00390		
		100	155,570	3.11039	-2.49425	-3.19870	14939	25919	.00340		
		788	151.350	4.20700	-3.37279	-3,16620	40030	51369	.01209		
		.69	149.340	4.82330	-3.71350	-3.13100	48360	. 03915	.00420		
		160	159.750	2.32490	-1.79299	-3.17510	12750	06823	.00360		
			<b>SRADIENT</b>	19459	.20512	.01621	.02331	.01242	00013		
		2	RUK NO. 19, 0	O RNAL =	6.63	CRADIENT INTERVAL =		-5.00/ 5.00			
				į	3	ð	5	CY	ŧ		
			100	1.07360	-1.42410	-3.59940	02070	01920	.06770		
			167.790	1.56655	-1.63570	-3.66550	13710	13360	.00000		
			163.626	2.99160	-2.77710	-3,72680	08979	19895	.00390		
			150.380	3.05070	-3.74370	-3,75559	07130	11340	.00310		
		100	155.060	4.29360	-4.63550	-3.73510	10220	23350	.05770		
		101	150.750	5.41149	-4.87420	-3.65550	06999	27200	. 01960		
		1.19	148.690	6.61580	-4,98790	-3.69945	07979	21240	.01530		
		1.199	159.370	3.95500	-3.74989	-3.75579	06760	15130	.01320		
		} b b	GRADIENT	26099	.17619	66915	.0003\$	. 95949	00029		

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(891531)

#UN NO. 66/ 0 RM/L = 6.97 GRADIENT INTERVAL = -2.60/ 5.00  #UN NO. 66/ 0 RM/L = 6.97 GRADIENT INTERVAL = -2.60/ 5.00  #UN NO. 66/ 0 RM/L = 6.97 GRADIENT INTERVAL = -2.60/ 5.00  1.953 167.890 -1.5290 -1.69460 -3.71070 -03120 -05780  1.953 167.890 113520 -1.72930 -2.74770 -03370 -05780  1.953 167.890 5.77270 -1.69460 -3.74070 -03370 -03780  1.953 167.890 5.77270 -1.69460 -3.74070 -035370 -03780  1.953 167.890 5.77270 -1.69460 -05820 -03780 -03780  1.953 167.890 5.77270 -2.6890 -3.74770 -035370 -03530  1.953 167.890 5.77270 -2.6890 -3.74270 -035370 -03530  1.953 167.890 5.77270 -2.6890 -3.74270 -035370 -03530  1.953 167.890 5.77270 -2.6890 -3.74270 -03530 -03540  6.44960 -3.6800 -3.74270 -03530 -03530 -03540  6.4200 -1.5190 -3.74270 -03530 -03530 -03540  6.479 169.990 -51930 -52150 -3.8330 -037470 -03530  8.479 169.800 -51930 -52150 -3.8330 -037470 -03530  8.479 159.620 -3.51930 -3.52390 -03620 -03520  8.479 159.620 -3.51930 -3.52390 -035470 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52390 -03570 -03530  8.479 159.620 -3.51930 -3.52590 -03570 -03530  8.479 159.620 -3.51930 -3.52590 -03570 -03590  8.479 159.620 -3.51930 -3.52590 -03570 -03590  8.479 159.620 -3.51930 -03580 -03570 -03590  8.479 159.620 -03510 -03510 -035100 -03570 -03590  8.479 159.620 -03510 -03510 -03520 -03570 -03500 -035100 -0350		E E	ENCE	ERENCE DATA								PARANETRIC DATA	C DATA	
HACH ALPMA CNH CLNM CA CTM CTMM 1.953 167-850 -3.5960 -3.7970 -05760 1.953 167-850 -1.50460 -3.77070 -05320 -5.7570 1.953 167-850 2.05540 -1.72919 -3.7470 -05320 -1.2360 1.953 157-850 2.05540 -1.72919 -3.7470 -05370 -17270 1.953 157-800 2.15520 -1.15990 -3.7470 -05370 -17270 1.953 157-800 3.77270 -28690 -3.6420 -10750 1.953 157-800 3.77270 -28690 -3.6420 -10750 1.953 154-80 3.44960 -1.51990 -3.27960 -01760 -056200 1.953 154-80 3.26460 -1.0529 -3.6420 -10760 -05910 1.953 154-80 3.26460 -1.0529 -3.64240 -10760 -056200 1.953 164-80 3.26460 -1.0529 -01760 -056200 1.953 164-80 3.26460 -1.0529 -01760 -00790 -00740 8.479 169-90 3.26460 -3.6570 -00790 -00740 3.479 169-90 3.4500 -5.6550 -3.8379 -00740 -00740 3.479 155-80 3.6520 -3.8379 -00740 -00740 3.479 155-80 3.6520 -3.8379 -00740 -00740 3.479 155-80 3.6520 -3.8379 -00740 -00740 3.479 155-80 3.6520 -3.8379 -00740 -00740 3.479 159-80 2.51890 -3.83790 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -3.3120 -00740 -00740 3.479 159-80 3.6520 -00740 -00740 -00740 3.479 159-80 3.6520 -00740 -00740 -00740 -00740 3.479 159-80 3.6520 -00740 -	2006 : 100	2000 2000 2000 2000 2000	<b>3</b>		* " "	8 6 6	25 E 25 E 37 E 37 E						PHI = AFTSTK = ATHS = SHÖSTK =	000.
1.953 169.860 -85440 -1.34950 -3.39660 .03120 .05780 1.953 167.839 1.15520 -1.60460 -3.71070 .09200 .05780 .05780 1.953 167.839 1.15520 -1.5959 -3.74230 -09520 .05570 .12560 1.953 159.429 3.19550 -1.15190 -3.74230 -09520 .05370 -1.1250 1.953 159.429 3.19550 -1.15190 -3.74230 -09530 -1.1250 1.953 159.429 3.19550 -1.15190 -3.74270 -050370 -1.1250 1.953 159.439 3.57490 -3.74270 -050370 -1.1250 1.953 159.439 3.20460 -1.05270 -3.74370 -005370 -00910 1.953 159.439 3.20460 -1.05270 -3.74370 -00140 -5.22010 1.953 159.439 3.20460 -1.05270 -3.74370 -010760 -054200 1.05420 1.953 159.439 3.20460 -1.05270 -3.74370 -010760 -054200 3.479 159.439 3.20460 -3.05350 -0.0140 -5.22150 -3.27390 -010760 -02150 3.479 159.440 -3.9530 -0.0540 -0.0540 -0.0540 3.479 159.440 -3.9530 -3.2350 -0.0040 -0.02470 3.479 159.440 -3.9530 -3.2350 -0.0040 -0.02470 3.479 159.440 -3.9530 -3.2350 -0.0040 -0.02470 3.479 159.440 -3.9350 -3.2350 -0.0040 -0.02470 3.479 159.440 -3.9350 -3.2350 -0.0040 -0.02470 -0.0350 3.479 159.440 -3.9350 -3.2350 -0.0040 -0.02470 -0.0350 3.479 159.440 -0.0350 -3.3350 -0.0040 -0.02470 -0.0350 3.479 159.440 -0.0350 -3.3350 -0.0040 -0.02470 -0.0350 3.479 159.440 -0.0350 -0.0350 -0.0040 -0.0350 3.479 159.440 -0.0350 -0.0350 -0.0040 -0.0350 3.479 159.440 -0.0350 -0.03	ı			2		0 /	RMAL =		RADIENT INTE		00.8 /00			
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1.953 150.900 5.7727026990 -3.6412000760 .00910 1.953 140.660 6.4630044610 -3.2796001760 .64200 1.953 159.450 3.20460 -1.05270 -3.743701165032410 1.953 159.450 3.20460 -1.0525601256 .0012500148				7	455.16		1.44960	63820	-3.73129	04245	.13630	. 99589		
1.953 148.860 6.46300 -1.05270 -3.2796001760 .64200 1.953 159.430 3.20460 -1.05270 -3.743701165032410 1.953 159.430 3.20460 -1.05270 -3.743701165032410 1.953 159.430 3.20460 -1.0525601256 .0012500148					140.00		5,77275	26890	-5,64129	00769	.05910	.00000		
1.953 159-439 3.20460 -1.05279 -3.743791165032410 gablebyt 1.276980635607256 .0912509148					144.86	, c	6.46399	44619	-3.27969	01780	. 54209	. 25555		
ERADIENT276090555601256 .0512505148  MACH ALPHA Chai CLina CA CYN CYNM  5.479 169.990 .5193056500 -5.6375005950 .04550  5.479 169.990 .5193022159063750050740 .02960  5.479 169.960 .519302215906770050740 .02960  5.479 155.660 1.62406569500677005070  5.479 155.660 3.60740 .57759000210 .01810  5.479 151.450 4.9474503560 -3.7799000210 .01810  5.479 151.450 4.9474503560 -3.7799000210 .01810  5.479 151.450 2.51830 .31120 -3.2779000210 .01820  5.479 159.660 3.60740 .57350 -3.2779000210 .01820  5.479 159.660 2.45590 .04960 -3.2779000210 .01820  5.479 159.660 2.45590 .04960 -3.2779000210 .01820  5.479 159.660 2.45590 .04960 -3.2759000210 .01820  5.479 159.660 2.45590 .04960 -3.2759000370 .02200  5.479 159.660 2.45590 .04960 -3.2759000370 .01820  5.479 159.660 2.45590 .04960 -3.2759000370 .01820					159.43	G	5.20460	-1.05279	-3,74370	11650	-,32410	. 65599		
RUM NO. 75/ G RN/L = 7.00 GRADIENT INTERVAL = -5.00/ 5.00  3.479					GRADIEN	· •	.27598	96358	0:250	.00125	00148	. 66599		
3,479 169,990 ,51930 -5,6550 -5,63750 -09990 04150 5,479 169,990 ,51990 -5,6350 -5,63750 -09990 04150 5,479 169,990 ,51990 -5,2150 -5,6350 -090740 02940 5,479 159,840 1,62400 -5,6690 -3,8350 -000210 -00210 -026470 3,479 159,840 2,51830 -3,1110 -3,8250 -000210 -002470 5,479 151,450 4,94745 -3,1320 -3,77990 -00210 -01910 3,479 159,840 2,54590 -3,77990 -00210 -01910 3,479 159,840 2,45990 -3,77990 -00210 -01910 3,479 159,840 2,45990 -3,1220 -3,31950 -00370 -01930 3,479 159,840 2,48290 -3,8220 -3,8250 -3,9350				2		9, 0	RKA.		RADIENT INTE	ERVAL = -5.	00' 8'00			
3.479 169.290 -51930 -56500 -3.6375000990 0.04150 5.479 168.220 .9109052150 -3.6350000740 .02960 5.479 168.220 .9109056600 -3.6359000470 .03930 5.479 159.640 2.5163005600 -3.625000420 .02470 5.479 155.660 3.60740 -31110 -3.625000420 .01810 5.479 151.450 4.547603560 -3.3165000790 .02500 5.479 159.640 5.45990 .04960 -3.31650 -3.00790 .02260 5.479 159.640 5.45990 3.5650 -3.31650 -3.00370 .02260				7	786.7		3	7		Ç	CTE	ŧ		
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3,479 159-840 2,51830 ,31110 -3,82530 -,00420 -,02470 ,51479 155.880 3,60740 ,57350 -5,77990 -,00210 ,01810 3,479 151,459 4,94745 -,01360 -5,30710 -,00790 ,04970 3,479 149,510 5,45990 ,04960 -3,31050 -,0370 ,01200 3,479 159,620 2,51830 ,51820 -,03600 -,02600 -,0					16.3.94		1.62400	56899		94170	03830	.00000		
3,479 155.660 3,60740 ,57350 -3,77990 -,00210 ,51610 5,479 151,450 4,54745 -,03560 -2,35710 -,05570 5,4970 5,4970 5,4570 5,4550 5,4550 5,4550 7,4550 7,4550 5,4550 7,4550					159.14	_	2.51630	.31119		00420	02470	. 99966		
3,479 151,450 4,54745 -,03560 -,350710 -,00790 ,04970 3,479 149,510 5,45090 ,04960 -3,31050 -,00370 ,02280 3,479 159,402 2,51030 ,31220 -3,6250 -,00367 -,00057					155.64		3.69749	.57350		00210	. 61016	.09699		
149,510 5,45090 .04960 -3,3105000370 .02260 159,610 5.1500 .31220 -3,825000360 .31100 159,6110005700057					151.49		4.94745	-, 93369		-, 99799	. 54975	. 65669		
189,642 2,51639 .31220 -3,6250 -,00660 .51100					149.51		5.45090	.04969	-	00370	. 122.69	. 00000		
- 00057 - 00057 - 00057					250.0	9	2.51439	.31229		-, 99860	.01100	. 55555		
TACCO TACCO				•	CAAC IENT	: <b>=</b>	2391	03647		99957	00057	. 55555		

CATE 19 AUG 74	2		TABUL	TABULATED SOURCE DATA,		MSFC TUT 578				P.(6E	<b>5</b>
			MSF	C 578 (SA10F)	142-1H SRB	MSFC 576 (SAIDF) 142-IN SRB (139) NBES			(1915/2)	E) ( 22 FEB 74	. 41
	SPEPSEME BATA	DATA						-	PARAMETRIC DATA	DATA	
	1 C C C C C C C C C C C C C C C C C C C							,	000	#	000
SAEF E	.5350 24.	¥	н	5,5570 IN.				×	000	STK	000
LREF =	.8555 IN.	YARP	18	. Dogs IN.					.100	ATHS	. 900
	.8999 IN.	ZMEP	11	.NI 5000.					5.000	SHDSTK =	000
SCALE =	9606.							,			
		RUN NO.	NO. 238/ B	Ø KN/L =	6.66 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		•	420	ž	3	ð	Š	CYNM	ŧ		
		MACH .	A1 420	19.77100	9,53570	1.04750	40610	.00290	-, 00320		
		101	82.320	19,87590	9,41640	1.03870	-,40750	. 51 526	00229		
		191	86.310	19,94050	9.24540	.96140	35690	.04620	90060		
		161	90.270	20,09520	0.32169	.69860	37420	.19650	.00300		
		1.193	94.240	29,12390	7,16540	.34900	-,35660	.26670	.01060		
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	08 240	25, 58569	6,75900	01279	35580	.35229	.00910		
		101.1	110	19,89920	6.25300	-,19650	-,37030	.32170	.00340		
		101.	90.279	29, 97739	6.28390	.70190	-,37050	.21580	00289		
			COACIENT	01039	-,17536	56547	.00225	.01801	.00057		
					•						
			¥	'C 578 (SA1GF	) 142-IN SR	MSFC 578 (SAIGF) 142-IN SRB (139) NBE6	**		(R916J1)	11) ( 01 NOV 73	. ET \$
	REFERENCE DATA	E DATA							PARAMETRIC DATA	: DATA	
									900		000
SREF #	.5050 SQ. IN	-	n	5.5570 IN.				BETA =		¥	000
LREF	.6500 IN.		11	.0000 IN.					100		000
DREF =	.0000 IN.	ZMRP		. 9000 IN.					8.000	34	000
	,	RUN NO.	NO. 15/ 0	O RN/L =	4.95 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
			;	į	į	đ	2	MAN	Ð		
		MACH	ALPHA		£7070	-1.689AD	-,00970	07150	.02410		
		666.	150.000	79230	.35520	-3.61290	00430	10940	.02550		
		66.6	164.080	1.42200	22750	-4.04940	04960	06660	.02385		
		665	159.990	2.04350	-,74270	-4.25810	10020	10720	.02870		
		599	155.890	2.72360	-1.12250	-4.49779	17210	28060	. 02660		
		.599	151.899	3.52330	-1.75330	-4.45180	24550	42945	.00720		
		. 599	149.840	4.00880	-2.20530	-4.44920	29520	46280	00820.		
		. 599	159.990	2.03100	72640	-4.26020	07700		07620.		
			GRABIENT	16827	.13465	.03865	. 01443	0.010.	3		

	000.		
: DATA	PHI = AFTSTK = ATHS = SHDSTK =		
PARAMETRIC	.000 .000 .100		CBL .03130 .02500 .02500 .02590 .02390 .02310 .05310 .05600 .05660 .0475900144
	BETA = FUESTK = ATHRNG = CONFIG =	-5.00/ 5.00	CYNM 17750 09340 13930 15770 14340 19580
			CYM .01620 .01310 .01960 .01960 .01996 .01860 .01860
		GRADIENT INTERVAL =	CA -3.63990 -3.76410 -4.25750 -4.41730 -4.47290 -4.4520 -4.23650
		4.89 GR	CLMM .747800877010570105701105751939101939104834048311
	5.5570 IN. .0500 IN.	0 RN/L =	CMM .50720 .76780 1.34590 2.11170 2.76210 3.57760 4.00960 2.0678917249
	и и и	NO. 22/ 0	ALPHA 175.110 168.125 164.370 159.995 151.775 149.845 159.995 159.995
RENCE DATA	IN XMRP YMRP ZMRP	15H	MACH .597 .597 .597 .597 .597
REFERENCE	.8038 SQ. .8050 IN. .8550 IN.		
	5867 = 1REF = 886F = 5CALE =		

19 AUG 74	2			TABUL	TABULATED SOURCE DATA, MSFC TUT 576	DATA, MSFC	2 TUT 578				PAGE	3
				#SK	MSFC 578 (SAISF) 142-IN SRB (139) NBE1S	142-TN SR	3 (139) WBE!	ة.		(R91AB1)	( 81 NOV 73 )	
	REFERENCE DATA	E DAT	•							PARAMETRIC DATA	: DATA	
					2				BETA =	000.	"	000
44 16	.5030 SQ. IN.	<b>.</b>			.0000 IN.				$\succeq$	. 366	¥	000.
	.6555 IN.		ZMKP		.0050 IN.				ATHRNG =	6.000	SHOSTK =	. 090 . 090
			RUN NO.	D. 48/ 0	O RN/L =	5.04 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		•		476	į	3	5	ž	CYNE	18		
			ACH 497	ALTIA 9.969	1.01040	.34680	.93630	.02770	.12950	.00450		
		. "	.597	11.920	1.26430	.56495	.95550	.07860	05450	.00480		
		\$	.597	15.960	1.81469	1.13730	.97420	.39861	-,35429	02110		
		an (	. 597	29.030	2.49999	1.88980	94730	1.05840	-1.57320	.02730		
		n '	.597	24.130	3.13339	3 92796	3698.	1.17950	-1.22820	.03640		
		,	750.	10 160	4.34710	4.33169	.84550	1.14160	80280	.01849		
		, ,	760	20.100	2.14.5	1.88969	.98220	.61680	-1.25370	.02570		
		·;	_	CE TO CE	.16523	.20230	99467	.96184	96238	.05125		
			RUN NO.	NO. 39/ 0	0 RN/L =	6.37 65	Gradient interval =		-5.00/ 5.00			
		2742	3	A10 14	NO.	¥.	ಶ	, L	CYNH	9		
		Í	מים	30 040	1.14749	03610	1.12440	.02310	.18590	.01410		
			200	11,995	1.39920	.03380	1.14540	.07820	.12030	.01070		
			206	16, 990	2.56910	.61169	1,14850	.45880	08180	.01610		
			206	29.240	2.84130	1.69220	1.13810	.41850	29190	.01170		
		· •	206.	24.440	3,68619	3.27170	1.10859	.91585	83570	. 02590		
		•	206	28.670	4.59210	5.46500	1.02520	.60520	47230	.03480		
		7,	-952	30,670	5.19180	6.39280	.99480	.64570	01202.	04410		
		₹,	-902	29.230	2.82970	1.64670	1.14150	CACUTU	1.6191	16000		
			-	GRADIENT	.19490	10116.	10000					
			RUM NO.	NO. 38/ U	O RNAL =	6.77 6	6.77 GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5	.00/ 5.00			
		Ž		AND IA	3	3	ð	E.	CYNH	eg G		
			99.	10.100	1.20010	.63040	1.64089	.04660	04950	.01460		
			1.199	12.110		1.04570	1.66740	.19960	18660	.00330		
		: -	199	16.270		2,20020	1.79489	.27100	-,45540	.01169		
			1.199	20.540		4.02910	1.68950	.30320	37980	.01769		
			1.199	24.880		5.91330	1.59020	.22630	-,20490	.91610	•	
			1.199	29.220		7.76190	1.51140	.22570	.16130	. 02300		
		7	1.199	31.299	6.75480	6.68589	1.49660	.16890	.54480	.01910		
		=	1.139	20.530	3.17760	3.99690	1.68250	.28390	37980	. 92929		
				GRACIENT	.26162	.38957	00828	.00576	. 02569	ecuna.		

SHEF LREF BREF SCALE

NBE1S
(139)
SRB
142-IN
6 (SA19F)
ISFC 57

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(R91AB2)	

	REFERENCE BATA	DATA								PARAMETRIC DATA	DATA :	
SREF : LREF :: BREF :: SCALE ::	.8030 SQ. IN8000 IN8000 IN.	IN XNEP YNEP ZNEP		ଳ ଗ୍ର ୩	5.5570 IN. .0000 IN. .0000 IN.			N.	BETA = FWDSTK = ATHENG = CONFIG =	.000 .000 .100	PHI = AFTSTK = ATHS = SHDSTK =	. 000 . 000 . 000 . 000
		25	RUN NO.	9 /09	RN/L =	6.94 GR	GRADIENT INTERVAL =	RVAL = -5.	-5.60/ 5.90			
		иАСН 1.963 1.963 1.963	A : : : : :	ALPHA 10.206 12.250 16.480	CNM 1.21460 1.59370 2.61890	CLNM 1.70500 2.35320 3.76140	CA 1.27200 1.26660 1.25160	CYN .03070 .04940 .07160	CYNH .03600 00950	. 90090 . 90090 . 90990		

1.963	19,296		1.70500	1.27209	. 03070	. 63600	00000.	
8	12.250		2,35320	1.26680	.04940	-, 00950	. 99999	
2 4	16.480		3.76149	1,25180	.07169	58295	. 00000	
200	797		4.59629	1,27789	.05730	94949	.00000	
200	28.110		4.93800	1.32360	. 04 160	.08850	.00000	
200	20.380		4.95950	1.29770	.02060	.12549	. 00000	
200.1	14. 149.0		5.59060	1,30900	.03199	.02319	. 09599	
200.1	26.780		4.44229	1,26300	.09220	06879	. 90599	
56.4	GRADIENT	.31616	.15463	.99237	05086	. 55421	. 69990	
3	1 100. 81/	1 D RN/L =	6.99 GR	GRADIENT INTERVAL =		-5.00/ 5.00		
HACH	AL PMA		<b>E</b>	ð	E.C	CYNM	CBL	
7.70	10,140		1,88300	.81180	00610	02740	.00000	
479	12.120	1.81760	2.04469	.82960	95219	.09419	. 05500	
470	16.256		2,28050	.88290	96549	.01829	.00000	
647	20.369		2,41950	.94800	.01020	. 90570	.0000	
3.479	24.520		2.51469	1.0324	.01399	. 93139	.00000	
3.479	28,689		2,72799	1,11760	.00630	01350	. 09999	
3.479	30,640		2.82030	1.15890	.00950	. 00400	. 00000	
3.479	29,360		2.40969	.94159	09650.	-, 02569	. 00000	
	CPADIENT		.04252	.01729	.00567	. 09969	00000.	

SCALE :

#### MSFC 578 (SATOF) 142-IN SRB (139) NBE:S

# (R91AD1) ( 01 NOV 75 )

	IN XMEP		5.5	5.5570 IN.				BETA = Fudstk =	. 000	PHI E AFTSTK ::	90.
	74.7	H H	. S	.0555 IN.				ATHRNG =	100	ATHS =	000.
	•							# 9I #00			•
	2	RUN NO. 2007 0	0 /00	RN/L =	4.92 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
		430	4	3	¥	ಶ	E.	CYNM	<b>5</b>		
•		50.280		8.04780	8.35910	.39460	58490	-1.88880	.03540		
		52.210	9	8,79060	9.65470	.32263	24780	-2.91250	. 02950		
		56.240	•	19,02670	11.52955	.14549	02190	-3.05890	. 02900		
	707	60.270		11.32730	12.99450	01640	08030	-1.33530	.04440		
		64 390		11.94620	13,34619	18370	.12460	.27660	.00230		
	101	88 300		12.22289	13.20280	26779	42590	69660	.03510		
				12.28920	13,36150	36495	23620	-,34260	.04630		
		A 270		11.32090	13.00030	02580	15170	-1.34340	.03100		
		GRADIENT		.21545	.23493	03786	.00751	.12950	.00018		
				į	3	3	E.	CYNH	e E		
	HECH	ALPHA		Į.	Ę	5		60140	USSEU		
	969.	59.660		11.73890	15,93740	00400	D. 44.0.	07166	00800		
	.898	92.600	200	12.38740	17,09110	.42950	00010	04116.			
	.696	56.670	220	13,33950	16.97200	.28060	08211.	0.46.	0.010.		
	969.	69.690	290	14.32720	19.63420	.18390	0001	01921	0.000		
	969.	64.690	290	14.99730	18.80000	.12380	14790	00890	0.000		
	960.	68.620	520	15.12230	16.73260	.98820	18669	0.5000	01120.		
	969.	79.490	190	15.21480	15.88950	.09110	-,21110	01410			
	868.	60.700	700	14.42270	19.76160	.25280	18060	06860	01410		
		GRADIENT	ENT	.17685	-, 05964	02178	-,01084	66660	9216n.		
	2	RUN NO.	196/ 6	EN/L =	6.63	GRADIENT INTERVAL =		-5.00/ 5.50			
		4700	4	į	3	ð	X.	CYNM	ij		
		֝֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	400	12 97400	12.42120	1.01895	29450	07140	.03960		
	261.1		30.000 K9 KAD	14.65920	12.84970	.95670	-,31390	15830	.01500		
	961.1	, ,	46 626	15.94610	13,96940	.87229	30850	15260	.02370		
	1.190		50.0E	16. A6020	14.76820	. 63930	32100	-,33269	.01450		
	261.1		A. A.A.	17.75809	14,39230	.73220	25400	25310	.02670		
	901	2	64.650	18.59679	13.81980	.67690	26340	16320	.02490		
	1.196	2	70.519	18.79830	12.96440	.65640	29680	12170	. 62760		
		Ę	69,660	16.80890	14,63820	.83790	32559	33160	. 02570		

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("FC 578 (SAIDF) 142-IN SRB (139) NBE15

(R91AD1) ( 01 NOV 73 )

	. 000 . 000 . 000 . 000
DATA	PHI = AFTSTK = ATHS = SHDSTK =
PARAKETRIC DATA	.000
•	BETA = FWDSTK = ATHRNG = CONFIG =
	5,5570 IN. .0000 IN.
	.5030 SQ. IN XMRP .6030 IN. TWRP .6030 IN. ZWRP
	SAEP = LAEF = BAEF = SCALE =

	410		3		E.	CYNM	ਭ
27	ALLIA		,				03000
277	50.490		7,42039		-,30640	us 1 cu	
					41400	104010	01490
946	52.400		7.63410				
970	46 450		8.45930		34520	15470	00770
			02203		33690	11380	-, 91040
.945	60.450		6.0000				
370	6.4 5.00		9.06300		-,35319	99860	01435
			01360		145340	13795	-, 06925
946	68.570		10.673.01				
976	70 455		9.98690		34640	07389	95380
					TOER	55500	01650
976	65.430		8.14010		2000	3	
	GRADIENT	.25967	.13642	01793	-, 05206	-,00274	.00518
	•						
2	RUE NO. 98,	98/ 0 RN/L =	7.03	GRADIENT INTERVAL = -5.00/ 5.55	RVAL = -5.	00/ 5.99	
Ş	770 17		2		H.	CYNM	9
	40.00	11 00670	4.50260	1.42920	27870	14860	94140
	30,00						11970 -

Š	KOE						
7777	AII PHÁ		<b>E</b>	ð	CYM	CYNM	ฮ
	100 PA		4.59269	1.42920	27870	14860	94140
	20.00		5.94639	1.42526	27490	-,15640	-, 03270
2.4.4	SE 210		6,13860	1.39260	27510	17629	03790
	A 260		7.04690	1,36550	26810	18770	02910
5.473	607.00		7,92230	1,24879	-,26630	22270	-, 03 090
2.473	340		8.69549	1,11270	25940	17790	-, 03550
24.5	2000		6.73720	1,03950	26080	20080	64090
479	60.269	15,73149	7.06189	1,35990	27190	18450	03770
	GRADIENT		.21616	-,01933	.05094	90244	.00003

	******
TMT 578	
MSFC	
E DATA,	
D SOURCE	
TABULATED SOURCE DATA, MSFC TWT 578	
CATE 19 AUG 74	

~ .		.000 .000 .000	
(R91AF1) ( 22 FEB 74 )	DATA	PHI = AFTSTK = ATHS = SHDSTK =	
. (R91AF1	PARAMETRIC DATA	.000 .000 .100	
	-	BETA = FWOSTK = ATHRNG = CONFIG =	-5.00/ 5.00
MSFC 578 (3A10F) 142-IN SRB (139) NBE13			RUN NO. 229/ 0 RN/L = 4.95 GRADIENT INTERVAL = -5.00/ 5.00
N1-271			4.95
FC 578 (3A10F)		5.5570 IN. .5065 IN. .0000 IN.	G RN/L =
30		eñ	. 229/
	4	YMRP ZMRP	25 NO
	REFERENCE DATA	. 5555 56. IN . 6555 IN. . 6556 .	
		SREF = LREF = BREF = SCALE =	

į		3	•		3		CYN	CYNH	JES	
Ę	į	ď	•	Ę	į				24.50	
748	-	170	12	.06150	9.23070		11310	. 13400	no ren .	
,,,,	3		•				04710	11600	DAPAN -	
705	2	050	2	016910	7.96661		20407	7.0100	,	
•	}		! !				04490	1 29945	00500	
594	98	000	2	.25550	2.0424					
	•		:	17040	1 03116		11360	1.94620	05610	
*60.	Ď	200	į							
76	ď	DEG TO	Ç	12 36970	1.25180	3 .49465	04480	1.44570	.01193	
•	'n	77.	•						01410	
101	6	500	Ç	52.50	42945		. 09290	1.41435	ucolu.	
•	•		•						00000	
707	9	700	12	56100	-1.2474		.23375	1.29000	101950	
	:		!						C+++0	
404	2	500	12	37120	3.62121		-, 13603	1.07090	01110.	
	)						30000	0100	0,000	
	CEAO	IENT		. 02682	53449		coorn.	EFETE.	1	
			•	:		Date Tries	A 14V0	שטי צייטט		
2	RUN NO.	230/ 0	9	# \\	2.0	WADIENI INTERVAL 3:55/ *:55	Kant			
						i	į	•	ē	
					3	•			5	

CBL .05560 .03750 .01260 .01860 .02640 .02640
CYM0017000060 .10080 .23160 .37260 .41050 .31920
CYM29900266502593032420263402536025360
CA .33000 .34550 .39650 .45460 .51740 .34530 .25960 .44300
CLM 11.70020 10.6226 6.43220 5.64260 3.22270 1.17010 06600 5.64270
CNH 15.89220 15.93350 16.37500 16.59600 16.28970 16.09140 16.54960
ALPHA 65.270 65.190 96.190 97.970 99.830 99.100
94ACH . 902 . 902 . 902 . 902 . 902 . 902

RUN	Ğ	257/ 0	O RN/L =	6.83 64	GRADIENT INTER	INTERVAL = -5.00/	97 5.00	
2	2	4	3	2	5	CYN	CYNM	J E
	֝֞֜֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	1 1	מפענש פו	A. 78550	.04130	.42420	13910	.01010
		2 5	0000000	44490	15630	.42850	.15130	.01420
1.194	Š		19.00.01	6 07660	37276	39850	.09430	.00810
1.194	<u>.</u>	ָבָר בָּיבְּר	20.171.02	A. A2010	55690	36530	.13130	. 90860
1.194			20.0E000	A.42770	70330	.35580	.19070	. 0080
1.134	2		20 19845	9,14350	81570	.33360	.25979	6044
	, E	2	19.97340	9.37130	.65220	.31940	.31650	.0090
761		550	20.31790	6.82920	.55610	.37390	13500	. 90069
	GRADIENT	ENT	02119	24299	94144	.00558	-, 00653	. 0004

### MSFC 578 (SAIDF) 142-IN SEB (139) NBE15

(R91AF1) ( 22 FEB 74 )

	.000
•	• • •
	* * *
DATA	PH1 AFTSTK ATHS SHDSTK
PARAMETRIC DATA	. 999 . 999 . 196
_	BETA = FUDSTK = ATHRNG = CONFIG =
	5.5570 IN. .0000 IN.
	11 10 11
<b>,</b>	XMRP YMRP ZMRP
REFERENCE DATA	Z
RENC	e z z
REFE	.5030 Se. IN .6050 IN. .6090 IN.

'n.	RUN NO. 125	125/ 0 RN/L =	7.02	SRADIENT INTERVAL =		-5.00/ 5.00	
7	A10 14		¥.	ð	Š	CYNM	ฮ
MALE		•	A. 98310	.67140	.39680	03269	95180
200.1	274.00		A.76769	60269	-, 39380	09150	03320
1.955	001.00		8 2852F	0.4707.0	39700	.03379	04310
1.955	DO. 00	•	7 AURRI	31390	-,37729	.05350	04250
200	100.00		7.14285	13740	-,35689	.19729	53889
200	06.040		6.13459	-,03739	-,33590	.05580	-, 04 565
200	2000		5 70500	13590	-,31950	03890	02780
200	190-100		7.77999	31130	-,37669	.67515	04590
1.935	COANTENT		16449	-, 04983	. 00395	.09413	.0008

2	Š	97/0	RN/L =	2.93	GRADIENT INTE	INTERVAL = -5.00/	00.6 /00	
3	NO IV		3	¥		¥.	CYN	G
		•	15956	8.65210		-,36830	22920	-, 0436
6.4.0			10 30840	A.48710		-,36320	23340	-,0436
5.479	20		47240	7 9745		36440	22330	-, 0453
5.4.0 6.4.0			19.47.60	7,39530		-,33340	17760	0436
			19.43240	6.69569		31090	18969	-, 0456
			19.15210	5.84739		27859	15916	9415
4.470	0.00		19.01160	5.51400		-,26475	16790	04290
47.	90.140		19.47440	7.38760	.35776	32220	15530	0339
	COADTE		66296 -	-,16165		.00541	. 60377	. 0000

	_
	(891411)
TABULATED SCURCE DATA, MSFC TUT 576	MSFC 578(SAIGF) 142-IN SRB (139) NBE15
DATE 19 AUG 74	

PAGE 69

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	.000.																																	
ATA	AFTSTK = AFTSTK = ATHS = ATHS																																	
PARANETRIC DATA	000.		ಕ	01350	02959	02440	03930	01620	02690	94679	02930	.00107		Ę	51630	-, 01960	02510	93110	04050	54060	00570	01930	.00034		ಕ	00620	. 00900	.01860	.01320	.00230	99679	-, 05220	00560	. 00041
_	BETA = Fudstk = AthrnG = CONFIG =	00.8 /0	CYN	1.65550	1.97530	2.19930	.46540	1.99560	1.16620	.96230	.61350	. 04400	00' 8' 00	CYN	.37719	.34930	.27310	05870	0.09670	. 02359	15290	00530	.01553	-5.00/ 5.00	CLARE	13130	12620	13670	20799	11020	. 01799	.14570	19330	01123
		VAL = -5.00/	E S	-1.37470	-1.35070	47960	.39460	.67679	.46870	.43640	.31019	-,10654	GRADIENT INTERVAL = -5.00/ 5.00	¥.	17940	16340	.26510	.31260	.24420	22169	.22540	.31780	00192		¥.	.23870	25550	.27120	.20349	.26050	25200	.22380	.28280	. 00061
		GRADIENT INTERVAL =	5	-1.69788	-1.46190	-1.21940	-,92396	66580	-,35969	21330	98460	07006	DIENT INTER	5	-1.64840	-1.51850	-1.24629	05166	62760	27890	10950	07596	97750	GRADIENT INTERVAL =	5	1 96340	1.83330	-1.55010	-1.30090	96740	63410	48540	-1.29630	07459
		5.03 GRA	E/J	-8.67630	-6.93370	-9.06190	-8.22965	-7.67689	-7.42900	-6.98745	-8.01640	09611	6.32 GRA	H.	-9.73930	05220-01-	10.19790	P7090	-8,04650	7 00050	-6. 95AGA	-9.27520	16703	6.74 GR	3	-4 974AA	-2.51400	1 04240	-2.43100	-1.71950	D0164	22020	-2.27970	-, i A209
! !	5,5570 IN. .0990 IN. .0990 IN.	RN/L =	3	929		_					10,42519	20992	RNA =	3	10 212 01				12.45333	000001	15.5555	14 62060	22711	) RN/L =	į	00783 87	13.53465	01617.21	16. 47480	07654.71	200000	10.04429	D 34970	24066
		RUN NO. 166/ 0	AH PHA	129.630	127.920	123,910	119.915	115.890	111.885	066-601	119.910	GRADIENT	RUN NO. 169/ 0	AI PHA	A 50 540	163.540	121 -021	110 600	119.000	066.611	111.010	109.710	GRADIENT	RUN NO. 170/ 0		ALTIA	050-621	200.721	163.631	119.640		111.04	201.601	GRADIENT
E DATA	THE CHREP THEFE	28	200	909		009	604	609	608	668	609		2	774		000	5 6	996	006	006	006.	200			į		102.1	1.201	102.1	102.1	107.1	102.1	102.1	1.201
REFERENCE DATA	.5950 Se. .6959 IN. .6959 IN.																																	
	SREF E LREF E BREF = SCALE =																																	

SCALE :

PACE 70

REFERENCE DATA	CE DATA									PARAMETRIC DATA	DATA		
. 8555 1N. . 8555 1N. . 8555 1N.	ž	XMRP YMRP ZMRP	(1 H H	8 50 50 50 50 50	. 5576 IN. . 5958 IN. . 5958 IN.				BETA = FWDSTK = ATHRNG = CONFIG =	.090	PHI = AFTSTK = ATHS = SHDSTK =	000.	
		3	RUN NO. 147/ S	0 /4	RW/L =	7.12	GRADIENT INTERVAL =		-5.00/ 5.00				
	3	-	A1 PHA		3	¥	5	ž	CYNH	CB.			
			124.71	•	12.62240	95770	-1.86330	.31140	11450	.01480			
	376		177. A1		3.28460	43540	-1,78930	.31840	10730	.02439			
			123.800		14.62339	1.31080		.55970	09300	.02549			
			110.700		5.87830	1.66659	·	35370	96759	. 09620			
	976		115.759		16.85959	2.23990		.33809	. 04969	. 51475			
			111.740	-	7.90160	2.69160	61170	34495	.05449	.05970			
	970	2 4	100 867		A. 14635	3.26199	47150	.33640	. 93739	.01329			
	976		110 420	•	5.51439	2,12733	'	.33845	04239	. 02136			
			GRADICNT	·	20139	-,14962		60129	50943	.00049			
		2	RUN NO. 195/ 0	9/ 0	RN/L =	96.9	GRADIENT INT	GRADIENT INTERVAL = -5.00/ 5.00	00' 2'00				
	7777		AI PHA		Ž	Ŧ	ð	H.V.	CYNM	ą			
	S.A.S		129.890	ė,	11.63730	.86290	-2.02729	.25729	.13716	.04260			
		2	127.969		12.32876	1.09859		.26620	.15990	.04279			
	3.479	2	123.970		13.56880	1,61200	-1.58530	.25910	.21020	.03940			
			119,970		14.71110	2,19789		.26100	.21370	. 03920			
			115,930		15,82960	2.56529		.25660	.17239	.04390			
			111.919		16.89365	3,24900		.27950	.11899	.04290			
	3.479	. 2	110,030	_	17,21950	3,56090		.27590	.12650	.04089			
		2	119.970	_	14.69399	2,21669	•	.25725	.21695	. 54839			
	;	_	SEADIENT	<u></u>	28027	13357		00079	. 50166	-, 00591			
		,		:									

PAGE 71	OV 73 3		000.	900.	60.																																		
•	1) ( 01 HOV 75	DATA	T IH	AFTSTK =		SHOSTK #																																	
	(R914J1)	PARANETRIC DATA	. 000	. 060	.190	e. 600		Ę	00160	09759	01000	62900	01540	.01600	. 91170	.00160	- 00001		ಕ	00300	06900*-	00660	90769	00600	01230	00340	01150	etana.		ਰੰ	-, 00950	00910	01000	01010	00620	90080	90240	-, 55925	1.003.
			BETA =	FLOSTK =	ATHRNG =	CONF.16 =	99' 8'00	CYN	27200	09770	04700	14990	19120	45039	93490	-1.30300	. 95783	-5.00/ 5.00	CYNM	04030	08440	17360	31160	44680	68729	-1.19703	31540	. ce 6	-5.00/ 5.00	CTA	03 92 0	69860	46990	72250	55930	34046.	14490	77710	69574
	ei						144L = -5.00/	£	01200	. 93890	09920	.00790	01935	06630	12750	06419	.05701		CYTH	.03690	03260	06680	09450	14430	23520	08454		.01097		N.	.03510	.01639	92150	10540	17340	19898	06040	19150	. 00695
14E 57E	MSFC 578 (SAIGF) 142-IN SR8 (159) NBEIS						GRADIENT INTERVAL =	5	-1.96960	-1.54890	-1.66350	-1.79810	-1.96540	-2.15749	-2,30669	-2.35169	.04096	GRADIENT INTERVAL =	5	-1.82250	-1.99960	-2.11530	-2.26780	-£.49480	-2.51440	-2.52990	-2.26390	.03507	GRADIENT INTERVAL =	5	-2.54740	-2.65€90	-2.65660	-2.73220	-2.80960	-2.92949	-2.92930	-2.73760	.6183
DATA, MSFC	142-IN SR						4.91 GR		-2.59670	-1.39990	-1.69260	-2.22640	-2.56740	-2.64469	-3.21850	-3.37640	. 09433	6.21 GR		29370	65470	-1.30640	-1.97700	-2.67490	-3.31120	-3.88070	-1.96740	.16408	6.63	2	-1.69240	-2.27190	-5.10190	-3.75420	-4.55510	-4.57520	-4,49340	-3.72850	90621.
TABULATED SOURCE DATA, HSFC TUT 576	578 (SA19F)		3	3.3376 1M.	.0550 IN.		RN/L =	Ž	2.04970	56960	. 69060	1.32669	2.00099	2.65820	3.49010	5.92310	-,16529	D RNAL =		74170	1.03200	1.56410	2.21540	2.99640	3.94990	4.67370	2.23080	18354	D RN/L =	3	95438	1.21160	1.92390	2.16860	4.16110	5.91450	6.78160	2.05010	27519
TABULA	MSFC						RUN NO. 25/ 0	An Bulk	050.050	170.049	166.050	164.010	159.945	155.859	151.740	149.820	GRADIENT	RUN NO. 24/ 0	AL PUA	040.000	167.980	163.900	159.750	155.579	151.370	149.360	159.750	GRADIENT	RUN NO. 25/ B	770	169.815	167.400	163,650	159.410	155.090	150.750	146.710	159.429	<b>GRADIENT</b>
		RENCE DATA			IN. THE		32	7	# T		265	.596	.594	.598	. 598	986	! !	2	7,71			205	8	206.	206	-906	306.		2	1		101.1	1.198	1.196	1.190	1.196	1.196	1.190	
AV6 74				. 5050	666																																		
DATE 13 AUG 74				306	֓֞֜֜֜֜֜֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	4.1																																	

PARAMETRIC DATA	BETA = .000 PHI = FUDSIX = .005 AFTSIX = ATHRNC = .100 ATHS = CONFIG = 6.000 SHDSIX =
	5,5570 IN. . DODD IN. . DGDD IN.
REFERENCE DATA	SAEF E .5555 SG. IN XNAP E . 6255 IN. YNAP E . 6255 IN. YNAP E . 6255 IN. YNAP E . 624E E . 6255

.000

M.PHA 169.850 167.850 163.640		4	;			Ē
167.650	5	3	ţ			
167.850	. 652.60	-1.36930	-2.48795	92640	. 07540	
163.648	10000	-1 S40AG	-2.52460	00750	56920	8
163.040		01440	-2 SA489	02320	08260	90.
150 450	£.06100				D8440	5
	3.26340	-1.84455	-2.66469	16113	00.30	•
240	A. SERBIG	-1.69579	-2.74760	03619	.10260	5
		04696	22.79190	-, 01999	. 9297	60.
150.415	20.00				0000	20
148.790	6.56700	95869	-2.82989	93369	2000	3 (
440 470	1 26520	-1.79125	-2.67389	06630	95870	8
GEADIENT	27667	52999	.01640	. 95222	05467	.0000
RUM NO. 75/	D RNAL =	7.00 6	Gradient interval = -5.00/ 5.00	!VAL = -5.	00/ 5.00	
4.044	3	2	5	CYN	Z L	ฮี
	72660	- 641 GA	-2.4846B	.05869	.05510	8
170.055	00000		0.000	52150	03410	60.
161.555	3.04080	1110	20000		0110	5
163.939	1.45985	45300	5686°2-	06100		
159.790	2.72620	-,27769	-2,71039	52565	05250	3
25.5	7.77620	63495	-2.45829	.00110	. 02540	6.
	04000	95569	-2.91140	95416	. 54895	8
191.661	S KAAAB	46220	-2.45599	.00375	. 91469	8.
	44480	27790	-2.71340	01346	.02770	60.
159.762	7					•

PAGE 73	(RS1AFE) ( RE FEB 74 )
tabulated sounce data, mose that 574	nsfc staisaist) 142-in 558 (139) 148E1 S
CATE 19 4UF 74	

PARAMETRIC DATA	.000 PNI = .000 .000 AFTSTK = .009 .150 ATMS = .055 6.000 SMOSTK = 6.008
PARA	BETA E FAOSTR = ATHRNS = CONFIG E 6.
	4,8570 lt. .9000 lt.
GEFERENCE BATA	. 5910 SA. IN DORF : . 6050 IN. YMEF : . 6050 IN. ZMF :
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8.00 00.00
-5.00/
18
INTERVAL
<b>GRADIENT</b>
3.5
RN/L =
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3	95425	00810	. 51390	.01065	. 51625	.01650	. 03560	.01799	.00154
CTABL	19300	00560 -	04620	.07239	. 12059	02051.	.17146	. 54519	19519.
H.	34620	06256	31590	32443	31199	31350	32520	31400	.09153
ฮ	.61230	.59430	.50920	39116	.25349	09339	-, 19199	.36619	53697
CLM	9.56965	9.32839	8,45259	7.06179	6.92630	6.34989	5.42789	7.44179	14956
3	19.45760	19.59110	19.67150	29.54415	20.21499	20,12110	19.97840	26.03340	. 93644
ALPWA	89.440	62.319	26.280	044		20.00	660.000	240	CAADIENT
MACM	1.195	1.195							

NSFC 578(SA10F) 142-IN SEB (139) MBEIS

(R918B1) ( 01 NOV 73 )

14. There is 5.5370 lN, the control of the control	REFERENCE DATA	174							PARANETRIC DATA	: DATA	
14.   True		2	Ī	77 6434					.000		11.255
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ALPMA CNM CLUM CLUM CA CTNW CTNW  9,960		5				ADIENT INTE		00' 8'00			
9.965 .96000 .35360 .92640 .02670 .10390 .10390 11.920 11.2470 .51719 .95650 11.020 .1060900609 11.920 11.24170 .51719 .95650 11.021900060900609 22.0039 2.45890 1.02190392703257032590 2.51870 3.95590 1.021301.26270 2.03970 3.93540 1.021301.26270 2.03970 3.93540 1.021301.26270 2.03970 2.32590 2.03140 1.021301.26270 2.03970 2.32590 1.02130 1.021301.26270 1.02130 1.	Ĭ	3	Ai Pua	3	Ŧ.	5	N.C	CTI	ਵ		
11.920 1.28170 .81710 .95580 .1920000680 .15.960 1.79610 1.14280 .98570 .1922022270 .25.9970 1.3721022270 .25.9970 .39200 -1.26570 .25.1370 2.91970 2.93940 1.02130 -1.26570 .25.200 2.91970 2.93940 1.02130 -1.26570 .25.200 2.91970 2.93940 1.02130 -1.26570 .25.200 2.91970 2.95140 1.02130 -1.26570 .25.200 2.91970 2.95140 1.02130 1.02130 -1.26570 .26.290 2.04590 2.95140 1.02130 1.02130 1.02130 -1.26570 .26.290 2.04590 2.9560 1.02130 1.02130 1.02130 1.02130 1.022	}		5	96960	35360	32840	.02670	.19399	. 50240		
15.960 1.79610 1.14280 .98570 .39520 -52270 -52270 -52300 1.25570 -524.130 2.46980 1.87520 .98540 1.02130 -1.25570 -524.130 2.45980 1.97520 .98540 1.02130 -1.25570 -524.130 2.45370 1.98540 1.17740 -1.16590 2.0.030 2.45370 1.84780 .98540 1.17740 -1.16590 2.0.030 2.45370 1.84780 .98750 .89660 -1.24290 -1.24290 1.1950 .98750 .98650 -1.24290 1.1950 1.1950 .15220 -1.24290 1.1950 1.1950 1.14330 .98650 -1.24290 1.1950 1.1950 1.1950 1.16490 1.1950	•		980	1.24175	61719	.95635	.19299	09669	96150		
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26.24G 5.91229 5.91649 .86535 1.11610 -1.16509 20.16G 4.37649 4.33575 .85149 1.1774984139 20.16G 4.37649 4.33575 .85149 1.1774984139 20.039 2.45915 1.64760 .96759 .8066916229 64401ENT .16702 .2006400456 .0653916229 10.010 1.1123903490 1.11990 .0155916229 11.950 1.40319 .06619 1.11449 .09899 .14679 16.090 2.08643 .57129 1.15700 .4026904369 16.090 2.08643 .57129 1.15700 .4026904369 24.455 3.66769 3.27295 1.15419 .40389 .14679 26.250 2.03429 1.65799 1.15700 .4026904369 26.250 2.33429 1.65799 1.15419 .4025931239 26.250 2.33429 1.65799 1.15419 .4425931239 26.250 2.33429 1.65799 1.15419 .4425931239 26.250 2.33429 1.65799 1.15419 .4425931239 26.250 2.33429 1.65799 1.15419 .4425931239 26.250 2.33429 1.65799 1.15419 .4425931239 26.250 2.33429 1.01599 1.55779 .0991017399 16.260 2.17170 2.17229 1.59279 .0931017399 16.260 4.42249 5.80999 1.59299 .2243935210 26.250 2.32399 1.01599 1.59299 .2243935210 26.250 2.32399 1.01599 1.59299 .2243935210 26.250 3.17379 2.17229 1.59299 .2243935210 26.250 3.17359 4.02400 1.50299 .2243935210 26.250 3.17359 4.02400 1.50299 .2243935210 26.250 3.17359 4.02400 1.50299 .2243935210 26.2516N .2251926520 .2275920519 26.2516N .22619 1.66960 1.66960 .2074020519 26.2516N .22619 1.66960 1.66860 .2074020519 26.2516N .22619 1.6670 1.50204 .2051920519 26.2516N .22619 1.6670 1.50209 .2051920504			24, 130	3,12959	2.91979	.93945	1.92130	-1,51469	00079		
\$0.160 4.37840 4.33579 .85140 1.1774084130 20.039 2.45910 1.64760 .96750 .05669 -1.24290 20.039 2.45910 1.64760 .96750 .05669 -1.24290 1.6702 .2056400456 .065990629906299 1.9470 10.010 1.1123003490 1.11990 .01550 .16140 1.11230 1.65700 1.114430 .09899 .16700 1.6000 2.08643 .57120 1.114430 .09899 .1670064580 1.65700 1.116700 .4126004380 .16700 1.6000 2.08643 1.25700 1.116700 .4126051270 2.08640 1.15700 .4126051270 2.08640 1.15700 .4126051270 2.08640 1.15700 .4126051270 1.15700 .4126051270 1.15700 .4126051270 1.15700 .4126051270 1.02200 .2525039970 1.15700 1.15700 .4126051270 1.25200 1.25200 1.2520031230 2.25200 1.15700 1.15710 1.1541051500 1.1571017390 1.15710 1.15710 2.15200 1.1571017390 1.15710 2.1720 1.15710 0.274009700 1.15700 1.1570017390 1.1570017390 1.15700 1.15700 1.1570017390 1.15700 2.1720 1.15700 1.1770017390 1.15700 2.1720 1.15700 1.1770017390 1.15700 2.17200 1.15700 1.1770017390 1.15700 2.1720 1.17700 2.1720 1.1770017390 1.1770017390 1.17700 2.1720 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.1770017390 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 2.17700 1.17700 2.17700 1.17700 2.17700 1.17700 2.17700 2.17700 1.17700 2.17700 2.17700 1.17700 2.17700 2.17700 1.17700 2.17700 2.17700 2.17700 2.17700 1.17700 2.17700 2.17700 2.17700 1.17700 2.17700	•		24.240	3,93230	3.91649	. B653c	1,11619	-1,16500	.04070		
20.030 2.4590 1.84780 .98750 .83669 -1.24290 egaDIENT 1.1870 .065590625906259 1.0010 1.11230 .055400458 .0655906259 10.010 1.11230 .05540559 1.11990 .01550 .16140 1.11950 1.11950 .01550 .16140 1.11950 1.11950 .01550 .16140 1.11950 1.11950 .01550 .16140 1.11950 1.11950 .09850 .14670 1.1950 1.1950 .09850 .14670 1.1950 1.1950 1.1950 .09850 .14670 1.1950 1.1950 1.1950 1.1950 .19650 .19650 1.19500 .4026004380 24.455 3.67260 3.22795 1.19409985098950 20.230 2.98460 1.1970 1.19310 .4198031230 20.250 2.19480 6.13340 .19620 .986609875098950 20.230 2.19480 6.13340 .1967098950 .32630 20.230 2.19480 6.13340 .1967098950 2.2623031230 2.19670 2.24450 2	-		30.160	4.37645	4,33579	.05149	1.17740	84138	. 94030		
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MAD. 36/ 0 EN/L = 6.34 CRADIENT INTERVAL = -5.00/ 5.00  ALPHA CNM CLNM CLNM CA CYN CYNM 10.010 1.1123006610 1.11990 .01550 .16140 11.960 1.4031006610 1.114430 .09690 .14670 12.020 2.06460 1.67750 1.15700 .4026050350 20.230 2.04460 1.67750 1.15700 .4026050350 20.230 2.04660 1.67750 1.15720 .4026050350 20.250 2.04660 1.67750 1.15700 .4026031270 20.250 2.04660 1.65750 1.15720 .4026031270 20.250 2.04660 1.65750 1.15710 .4425031270 20.250 2.04660 1.63750 1.15410 .4425031270 20.250 2.04660 1.65750 1.15410 .4425031230 20.250 2.04660 1.65750 1.55670 .09374009197 10.290 1.10710 .54450 1.65770 .09374009780 10.290 1.10710 .54450 1.69560 .2475025720 20.250 2.17170 2.17220 1.69500 .2475025720 20.250 2.17170 2.17220 1.69500 .2475025720 20.250 2.17170 2.17220 1.69500 .2475025720 20.250 2.17170 2.17220 1.69500 .2775025720 20.250 2.17170 2.17220 1.69500 .2775025720 20.250 2.17170 2.17220 1.602002750027520 20.250 2.17170 2.17220 1.60200275502755027520 20.250 2.25200 1.60200 1.60200275502756		•	HADIENT	.16702	.29564	05458	.06559	-, 96259	.05213		
10.010 1.1123903490 1.11999 .01559 .16140 .11.950 1.40319 .06610 1.14430 .09699 .14679 1.16790 1.16790 .14679 .20,239 2.64460 1.65790 1.15700 .4026004380 24,455 3.67260 3.22795 1.15710 .4036009199 224,455 3.67260 3.22795 1.10420 .4794029199 22,6450 3.67260 3.22795 1.10420 .4794029199 25,250 2,63420 1.15410 .44250 .3227039199 25,250 2,63420 1.65100 1.15410 .4425031230 20,640 1.19474 .3562405673 .3264601633 24,240 1.19474 .3562405673 .3564601633 21,210 1.46590 1.01590 1.65770 .09374009780 1.20,110 1.46590 1.01590 1.65770 .09374009780 1.20,110 1.46590 1.01590 1.56260 .2475025720 22,530 3.17370 2.17620 1.69500 .2475025720 22,530 3.17370 4.02460 1.69500 .2475005780 3.22720 22,530 3.17370 4.02460 1.69500 .2475005310 22,520 22,520 3.22750 3.27502572025720 22,530 3.2290 3.27502572025720 22,530 3.2290 3.27502755022520 22,530 3.27502755022520 22,530 3.2290 3.27502755022520 22,530 3.2290 3.27502755022520 22,530 3.27502755022520 22,530 3.275027550275502755027550 3.275027550 -	1	3	7	3	2	ð	ž	CTA	ë		
10.010 1.1122903490 1.11990 .01550 .16540 .10561 11.950 1.16740 .16540 1.11290 .01550 .16670 1.16790 .01550 .16670 1.16790 20.6843 .57120 1.15700 .4026004380 20.290 2.04660 1.65720 1.15700 .4026004380 20.290 2.64660 1.65790 1.15700 .402600438031270 20.230 2.6460 1.65790 1.15700 .402600438031270 20.230 2.6460 1.65790 1.15410 .4425039979 20.230 2.6460 1.65790 1.15410 .4425031230 20.230 2.6460 1.65790 1.15410 .4425031230 20.230 2.6460 1.65790 1.15410 .4425031230 20.230 1.15410 1.15410 .4425031230 20.230 1.15410 1.15410 .4425031230 20.230 1.15410 1.1541009700 1.15410 1.1541009700 1.15410 1.46590 1.10790 1.56590 .2343025720 20.2310 1.2620 2.1770 2.17620 1.69800 .2343025720 20.25720 20.2310 2.24260 1.50800 1.50800 1.206017390 1.13400 2.2750022520 20.204 2.2050407580 1.60700 1.60700 1.60700 1.60700 1.2060422520 20.204 2.20760 1.60700 1.60700 1.60700 1.2060422520 20.204 2.20760 1.60700 1.60700 1.60700 1.2060422520 20.204 2.20760 1.60700 1.60700 1.60700 1.2060422520 20.204 2.20760 1.60700 1.60700 1.60700 1.60700 1.20700 1.20700 1.20700 1.20700 1.20700 1.20700 1.20700 1.60700 1.2	*	¥Ç¥	ALPHA	3	₹ ਹ	5	Ę				
11.950 1.40319 .06610 1.14430 .09699 .14679 16.090 2.08643 .57129 1.15700 .4026054380 24.455 3.67260 1.65799 1.15510 .419805279 24.455 3.67260 3.22795 1.10420 .4026090399 22.650 5.16260 3.22795 1.10420 .6707969199 29.660 5.16260 3.22795 1.10420 .6707099199 20.230 2.63420 1.63199 1.15419 .4425031239 6RADIENT .19474 .3562405673 .3264601653 4LPMA CAM CLAM CA CYM CYMM 10.990 1.16710 .54459 1.65770 .09374009780 12.110 1.46599 1.01599 1.65770 .09374009780 12.110 1.46599 1.01599 1.65770 .0931017399 12.20 2.17170 2.17260 1.69500 .2475925720 22.520 3.17370 4.02460 1.69500 .2475925720 22.520 3.17370 4.02460 1.69500 .2475925720 22.520 3.2759 4.05460 1.66250 .275002521025210 22.220 3.2759 1.67620 1.68500 .2755025220 22.5460 3.27590 1.66570 1.6620025220 22.550 3.2550257502575025250	•	-905	10.010	1.11230	53490	1.11990	.01459	.16140	02900		
16.090 2.08643 .57120 1.15700 .4026004380 2.0230 2.84460 1.65750 1.15310 .419805.270 2.64460 1.65750 1.15310 .419805.270 2.64460 1.55790 1.15310 .419805.270 2.64460 4.5960 5.28530 1.02220 .5525039979 20.20 2.63420 1.59190 1.15410 .44250 .32630 .32630 2.63420 1.63190 1.15410 .442503997939979 20.230 2.63420 1.63190 1.15410 .4425039979 20.230 2.63420 1.65190 1.15410 .4425039979 20.230 1.16710 1.46590 1.6570 0.0374009780 12.110 1.46590 1.01590 1.65770 .0931017790 12.110 1.46590 1.01590 1.65770 .0931017790 12.250 2.6250 2.2450 1.15790 1.		400	11,950	1.40319	. 96619	1.14439	09890.	.14679	.01040		
20.25G 2.0446G 1.6575G 1.1531G .4198G5127G 24.45G 3.2279G 1.1542G .87G798919G 24.45G 3.6726G 3.2279G 1.1542G .87G798919G 28.66G 4.5985G 5.2953G 1.0522G .5525G39979 29.66G 5.1254G 1.0522G .5525G39979 29.26G 5.1254G 1.1541G .4425G3123G 2.3242G 1.6310G 1.1541G .4425G3123G 2.326G 2.326G01633 2.22G 2.32G 2.32GG			16,090	2,04643	.57129	1.15700	.40265	04365	. 05969		
24.455 3.67260 3.22795 1.10420 .8707989195 28.455 3.67260 4.59600 5.29530 1.02220 .5525039950 3.29530 1.02220 .5525039950 3.29530 1.0220 .5525039950 3.29530 3.29530 1.0220 .50860 .609500 .32630 3.29530 1.03190 1.05220 .609500 .3263030632 1.03190 1.05220 .3064801633 4.29420 1.03410 4.425001633 4.29420 1.0374009780 18.2950 1.18710 2.17620 1.69500 .2343025720 25.500 3.29500 1.59500 1.59500 3.2343025720 25.500 3.29500 1.59500 1.59500 3.2343025720 25.500 3.29500 1.50520 1.50520 3.29500		20	20.230	2.84460	1.65750	1.15310	.41940	5:270	.01010		
20,660 4.59800 5.29530 1.02220 .5525039950 20,660 5.19800 6.13340 .98660 .69500 .32630 32630 20,230 2,244250 .44250 .32630 32630 20,230 2,24250 1.65100 1.15410 .4425031230 64251 1.15410 .44250 .32630 .32630 .32630 .32630 .32630 .32630 .32630 1.15410 1.46250 .3262031230 1.15410 1.46250 1.65240 1.65270 .0374001633 1.2.110 1.46290 1.01590 1.65770 .0910017390 1.2.110 1.46290 1.01590 1.53670 .091017390 1.2.250 2.2.250 2.23430 .2343025720 2.2320 2.2320 3.2220 3.2320 1.50200		400	24.455	3,67260	3,22795	1.15429	.87575	89195	. 63953		
\$0.660 5.18980 6.13340 .98860 .60500 .32630 20.230 20.230 2.62420 1.63100 1.15410 .4425031230 20.230 2.62420 1.63100 1.15410 .4425031230 20.230 2.62420 1.63100 1.15410 .4425031230 2.62420 1.6620 2.0642001633 2.6240 2.62420 1.6620 2.06420 2.06420 2.06420 2.06200 1.66200 2.06420 2.06200 2.06			24.660	•	5.29530	1.02220	.55256	n. 866	.03490		
EGADIENT .19474 .3562805673 .7364601653 GRADIENT .19474 .3562805673 .7364601653 ALPMA CAM CLAM CA CYM CYMM 18.260 1.10710 .54450 1.53670 .0974009780 18.210 1.46590 1.01590 1.53670 .0974009780 18.250 2.17170 2.17620 1.69500 .2345017390 20.530 3.17350 4.02460 1.69500 .2475025720 24.660 4.42240 5.80980 1.50620 .1784005310 25.250 3.2290 6.75190 0.69670 1.50620 .18950 .22620 26.550 3.2290 1.6520 1.6520 .2755022620		200	39,660	•	6.13349	.98860	.49509	.32630	.02950		
### PACHENT .19474 .3562805673 .5364801653  #### PACHENT CHM CA CYM CYMM  #### CMM CLMM CA CYM CYMM  ##### CMM CLMM CA CYM CYMM  ##### CMM CA CYM CYMM  ##### CMM CA CYM CYMM  ##################################		20	20.230	2.43429	1,63199	1.15410	.44259	31239	.02090		
ALPHA CNM CLMM CA CYM CYNM CYNM ID.90, 397 0 RN/L = 6.76 GRADIENT INTERVAL = -5.067 5.00 ALPHA CNM CLMM CA CYN CYNM CYNM ID.90 1.10710 1.63670 .0374009780 12.110 1.46590 1.01590 1.65770 .0901017390 16.260 2.17770 2.17620 1.69500 .2345025720 20.530 3.17550 4.02460 1.69500 .2345025720 20.2350 3.2220 3.2350 1.51390		•	FRADIENT	.19474	.35628	09673	.5364	01633	.00153		
ALPMA CNM CLMM CA CYM CYNM 10.590 1.10710 .54450 1.65670 .0374009780 12.110 1.46590 1.01590 1.65770 .0901017390 16.260 2.17170 2.17620 1.69500 .2345036120 20.530 3.17350 4.02460 1.69500 .2475025720 20.520 3.2250 7.72460 1.51360 .18690 .13190 31.290 6.75190 0.69670 1.50620 .18620 .22520 20.540 3.22190 0.69670 1.50620 .1862022520 20.540 3.22190 4.05913 1.6720 .2755022520		2				ADIENT INTE	RVAL = -5.	00's /00'			
10.090 1.10710 .50450 1.63570 .0374009700 12.110 1.46590 1.01590 1.65770 .0991017390 1.6570 0.091017390 1.6570 0.091017390 1.6520 25.250 2.17170 2.17620 1.69500 .2343036120 26.250 3.17350 4.02460 1.69500 .1764005510 25.250 25.250 25.250 0.69510 1.50500 1.50500 1.50500 1.50500 1.50500 1.505002262022600	1	¥5	AH PHA	3	£ C	3	E.	CYNE	ಕ		
12.110 1.48590 1.01590 1.65770 .0901017390 16.260 2.17170 2.17820 1.69500 .2343036120 20.530 3.17370 4.02460 1.69500 .2475025720 2.2520 2.2520 3.17370 4.02460 1.69500 .2475005510 2.2520 2.2520 3.2290 6.75190 6.69670 1.50620 1.6950 1.50630 2.2521022620 3.22190 4.05910 1.60720 2.275002262022620 3.2260 4.2550020769 .00467 .0260422620 3.2219	•		10.090	1.16715	.58459	1.63670	.03740	09780	.05830		
16.260 2.1717 2.17820 1.69309 .2342036120 22.530 2.535 3.17350 4.02460 1.69960 .2475025720 22.230 3.17350 4.02460 1.506960 .1764005510 25.22	•	ē	12,116		1.01590	1.65770	01060.	17395	. 99549		
25,535 3.1755 4.02460 1.66960 .2475025720 26,536 3.17550 4.02460 1.56620 .1764505510 26,222 5.92305 7.72489 1.51360 .18695 .13190 31,296 6.75190 6.69670 1.56250 .16320 .55510 -22620 26,2316N25166 .3967553769 .00467 .02604	•	ě	16.260	•	2.17820	1.69300	.23439	36120	.01559		
24.860 - 442240 5.88980 1.28620 .1784005510 28.222 29.222 5.9230 7.72480 1.0130 .18890 .13190 31.290 6.75190 6.69670 1.50250 .16320 .25510 20.222 0.27500 1.66720 .2750022620 20.27501 0.0260422620 20.27501 0.02604	• •		20.536	3,17350	4.02460	1.66963	.24759	~.25720	. 55719		
29,220 5,92300 7,72480 1,51360 118890 113190 21,220 21,220 6,59310 6,69670 1,50250 16320 52510 - 22520 20,429 0,03467 25166 3,9975 -,03769 0,0467 0,50504	• •		24.860	4.42240	5.86980	1.50629	.17645	95519	. 69259		
31,290 6,75190 0,69670 1,50250 ,16320 ,52510 - 20,549 3,20070 4,05910 1,68720 ,27500 -,22620 -,2216N ,2616 ,39075 -,50769 ,00467 ,02604 -	• -		24.226	5.92305	7.72489	1.51300	.10095	13195	06030.		
20,549 3,20070 4,05919 1,69720 .2755022620 e.2016N .26166 .3907583769 .00467 .02604	• -		31.290	6.75190	0.69670	1,56259	16320	.52510	55543		
GE-01ENT .26166 .3907503769 .00467 .02604	• -		20.545	3.25470	4.05913	1.66729	.27550	22829	.01316		
	•		THEICHE	.20166	39075	93769	. 09467	. 02654	65921		

MSFC TUT STE
ACULATED SOURCE BATA,
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GATE 19 AUG 74

(R91881) ( 01 NOV 73 ) MSFC 578(SA10F) 142-IN SEB (139) NBEXS

SAEF = LREF = BREF = SCALE =

.8939 SS. .8909 IN. .8999 IN.	Z	XHRP THRP ZHRP		5.58 .00.	. 55570 IN. . 0000 IN. . 0000 IN.				BETA = FLOSTK = ATHRNG = CONFIG =	.000	PHI E AFTSTK :: ATHS :: SHDSTK ::	11.250 .000 .000
	ūż	RUN NO.		61/ 0	RN/L =	6.97	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	00/ 5.00			
			2017	4	3	¥ 5		CYN	CYNH	<b>1</b>		
	E T		֓֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓		15470	1.78930		.05730	06680	. 00000		
	1.955				4 42540	2.46260		.07070	09700	00000		
	1.955		7.71		2000	00000		10030	-,13310	00000		
	1.953		2	90	2,000,00	2.6000		0.06610	07390	. 00000		
	1.953		20.790	56.	3.95430	7 4 a C B C	1.39210	.07350	.02000	, 99999		
	1.953		23.	20	2.46170	1000		04950	.12180	.00000		
	1.953		29.4	<u> </u>	7.16490	5.7.910		07740	07640	.00000		
	1.953		31.4	22	7.76699	3.41920			0.560	00000		
	1.953		20.7	06,	3.92739	4.60130	-	. 1341.	77.0			
		J	RADIENT	¥	.31959	.18236		00021	96500.	00000		
	Q.	RUN NO.	ó	0 /09	RN/L =	6.99	CRADIENT INTERVAL = -5.00/ 5.00	ERVAL = -5.	00/ 5.00			
			:		3	3		CYN	CYNM	e e		
	Į.		į					01230	01590	00000		
	3.479		10.		1.38170	30545.4			2000	00000		
	3.479		12.		1.61780	2.05460		-, 0139U	0.0000			
	7. A79		16.		2,79590	2.28570		01730	0247	36000		
	47.		20		3.86740	2,41550		00190	04250	00000		
					R DORAG	2,55510		01040	-, 03350	.00000		
			20.00		6 44 940	2 80590	1.12190	.01500	00930	.00000		
	3.47		97		0.014.0			.09880	-,01040	.00000		
	3.47		30		7.54960	107/6"2		24460	0.070	00000		
	3.475		25		3,89590	2.44075		01920.	P. C. C. C.			
		G	RADIEN1		.27687	.04665		.9000.	. 0004	onno.		

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(891801)	

	11.250	000.	050.	8.000																																		
ATA	**	   <b> </b>		SHDSTK = 8																																		
PARAMETRIC DATA	_	_					CB,	.05070	.03220	.05190	.04920	. 02380	.02590	.04560	.02000	-, 00560		ag J	.00390	.03900	.02360	.02610	.03470	. 93649	. 03900	.03700	. 96194		ŝ	.03330	.02589	.01269	. 62990	.01980	.01979	. 91769	.02920	05569
۵.		FWDSTK =	ATHENG =	CONF16 =		-5.00/ 5.00	CYN	-1.86240	-3.08980	-3,07240	-1.59250	.59590	88379	67560	-1.42180	.12369	-5.00/ 5.00	CYK	.48150	.32270	1.14760	.12940	03120	18410	04410	.08520	03695	-5.00/ 5.00	CYNM	.08100	.01310	-, 06890	-,30550	-,11199	04919	-, 11290	28829	-, 99797
							CYN	57200	26340	04.920	10975	.05389	42389	25520	11820	.00627		K.	06820	00360	.02790	18890	13530	-,22510	24370	2020	01170		Ç	-,30530	33770	33210	31670	27079	29650	36310	-,32550	.09167
						SRADIENT INTERVAL =	5	37500	30070	.13550	93199	18980	27840	-,34359	03390	-,03643	GRADIENT INTERVAL =	ಶ	.52090	.41885	.27410	.18050	.10840	.09130	.19439	.25205	52084	GRADIENT INTERVAL =	3	1.95839	.94580	.86600	.63290	.7367	.67379	.64700	83880	01756
						4.92 SRA	¥ 3	8.32710	9.80320	11,48050	13.01719	13.43219	13,29259	13,32459	12,99150	.23898	6.22 GR	<b>E</b> C	16.03840	17,12760	19.01690	19,82920	18,93690	16.81960	15.95740	20.03240	-,00835	6.62 GR	3	12 4447A	12.86310	14.98249	15.04800	14, 36800	13,91995	13,15250	14.71299	.04725
	5,5570 IN.	.0000 IN.	חבחה זע			RNAL =	AS C	2 52140	8 A3750	9.96370	11,39139	11.89565	12,15360	12,35300	11.27689	.21543	3 RN/L =	CNH	11.75880	12,39180	13,28595	14,31080	14.96290	15,21429	15.23180	14.44650	17880	0 RN/L =	3	13 06610	14 60480	15.405.0	16.82890	17 64650	18.44240	18.66090	16 75890	.23628
	**	,,,	,	1		NO. 203/ 0	AI DUA	200	2000	56 24fl	60.270	64.300	68.300	20.209	60.270	GRADIENT	RUN NO. 202/ 0	ALPHA	50.690	52.690	56.670	60,700	64.690	68.620	70.490	69,725	GRADIENT	RUN NO. 281/	4110.4	אבר הא	20.00	56.530	80.05 875	210.00	58 650	70.529	A1 650	GRADIENT
REFERENCE DATA	YMRP	:		1. 2.3KF		RUN NO.	70		161					*	164	6:	2	MACH	100	106	100	106	5		100	106.		RUN		100	1.197	101.1	1017	101.1	107	1.19	.61.1	1-19
REFEREN	4030 40	2000	2000	.BGG: IN.																																		
	1			BREF =	State =																											•						

PAGE 77	( 01 NOV 73 )		11.850 .000 .000		•
ī		DATA	PHI = AFTSTR = ATTHS = SHDSTR =		
	(891601)	PARAMETRIC DATA	.000		CBL 02430 025020 01620 012340 02340 02340 02370 03370 03550 035
			BETA = FWBSTK = ATHRNG = CONFIG =	00' 8'00	CYNN0603003540023100395004600 .03310 .00210 .0021024400244002440029510295102951029510
	ei.			1.44L = -5.(	CYM30960316603469036220362203629036290262025870258702587025870258702587025870
TWT 576	(139) MBE1			GRADIENT INTERVAL = -5.00/ 5.00	CA CYM CYMM 1,324653096006030 1,324653166003540 1,222203166002310 1,122203562002310 1,031653622503955 1,031653622504600 1,2056032440 .00230 1,2056032440 .00230 CA CYM CYMM 1,429652567024400 1,429602567024400 1,354402621024400 1,3544026210264400 1,354402650029510 1,354402650029510 1,354402650029510 1,354402650029510 1,354402650029510 1,354402650026500 1,354402650026500 1,35440265002650026500 1,35440255002650026500
DATA, MSFC	142-IN SEB			7.16 GR	CLMM 7.45690 7.66690 8.40400 8.76690 9.10200 10,19110 9.8620 8.05510 7.04 4.65030 5.12240 6.05260 7.0410 8.01350 8.51670 6.69540 7.01790
TABULATED SOURCE DATA, MSFC TWT 578	MSFC 578(SA10F) 142-IN SRB (139) MBE1S		5.5570 IN. .0000 IN.	RN/L =	CNM 13.65670 14.35360 15.61050 16.65850 17.59510 16.38240 .25991 0 RN/L = CNM 13.00690 13.58390 14.70550 17.49990 17.49990 17.66450 17.49990 17.49990 17.49990 17.49990 17.49990 17.49990 17.49990
TABULA	MSFC		H H II	RUN NO. 135/ 0	ALPHA ALPHA 2 50.490 1 2 56.450 1 2 60.410 1 2 64.510 1 2 60.450 1 2 60.450 1 3 60.320 1
		ERENCE DATA	SG. IN XDRP IN. YMRP IN. ZMRP	25	MACH 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.942 1.943 1.947 1
74 25		REFEREI	.5939 Se. , 6999 IN. .0998 IN.		
DATE 19 AUG 74			SREF = LREF = DREF = SCALE =		

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(R918F1) ( Of NOV 73 )

## MSFC 578 (SAIOF) 142-IN SEB (139) NBE15

PARAMETRIC DATA	000 PNI = 11.250 000 AFTSTK = .000 100 AT45 = .000 000 SHOSTK = 8.000
	IN. FUGSTK : FUGSTK : ATHRNG : IN. CONFIG :
	ХИКР = 5.5570 IN. YMRP = .0000 IN. ZMRP = .0000 IN.
REFERENCE DATA	.5050 Se. IN0000 IN00000 IN
	SAEF = LREF = BREF = SCALE =

2	NO. 234/	0 RN/L =	4.95	GRADIENT INTE	NIERVAL = -3.	-3.00/ 5.00	
7	AH PHA	3	£	5	Z.	CYNH	ਵੱ
296	89.160	12,15440	8.94995	.22920	46380	1.97840	.00440
9	A2.040	12.04620	7,87599	.27660	-,30400	2.79510	-,09240
20.	A6. 000	12,33130	5,55549	.30289	26380	2,53590	-, 00470
2 4	89.950	12.52570	3,39589	36890	23060	1.87690	-,01770
, 40 K	93.940	12,41419	1.56570	.47459	-,23410	1,88270	03700
40.	97.910	12,41169	.16970	.41386	16840	2,18570	03210
98	99.890	12,45540	-, 59010	.32939	19500	2,61510	00580
965	69.970	12,55199	3.98130	.32499	-,34385	2.08980	99929
	GRADIENT	. 91777	48713	.09763	.01094	-, 00333	00132

MACH			Į.	ð	CYN	CYNM	9
70			10,8880	.40060	-,46150	.79640	.0100
			19,01339	.49559	46010	.82120	00440
			7.66110	.43810	45330	.92280	00960
			4.86550	.55280	39920	.64950	00950
760			2,79500	.59820	39170	.54919	90459
100	97.050	16.20460	59910	3900	-,37935	.73960	.03180
168			61630	.30940	39190	.79290	. 02660
766			4.86090	.55220	40899	.66760	-,01540
	_		59794	09215	.09452	09634	. 90136

RUN NO. 233/ 0 RN/L = 6.24 GRADIENT INTERVAL = -5.00/ 5.00

Ş	ALPHA	3	CLIM	ర	£	CYNH	9
200	89.420	19.53990	9.51080	.62650	42170	.18620	.0130
200	82.310	19,65160	9.28840	.61080	43870	.23640	99070
500	86.280	19.92560	8.45115	. 52419	42160	.41210	. 0038
200	90.236	20.09270	7.39849	.39650	42210	.52870	.0961
900	94.230	20.17230	6.78425	.21840	41885	.63590	9945
	98.210	29.17690	6.42999	.01980	43970	.71729	. 52826
200	150.590	20, 51749	5.86290	08019	-,45149	.71500	. 92799
55.5	90.220	20.06600	7,11445	.39735	-,43260	.53799	-, 0595
	COADIENT	חספה	18553	L. GARA	60582	. G2 N2 G	.06696

PAGE TS	(R918F1) ( B1 NOV 73 )
TABULATED SOURCE DATA, MSFC TWT 578	MSFC STRISALDF) 142-IN SRB (139) HBEIS
CAPE 19 AUG 74	

22	
* ME1S	
(139)	
288	
145-IN	
578 (SA10F)	
MSFC	

REFERENCE DATA	DATA							PARAMETRIC DATA	DATA		
.5050 SB. IN .8550 IN. .8505 IV.	K XMRP YMRP ZMRP	<b>1</b> 1 11 11	5.3570 IN. .0000 IN. .0000 IN.				BETA = Fudstr = ATHRNG = CONFIG =	. 900	PHI = AFTSTK = ATHS = SHÖSTK =	11.250 .000 .000	
	25	RUN NO. 126/ D	D RNAL C	7.02 GRA	DIENT INTER	GRADIENT INTERVAL = -5.00/ 5.00	00'5 /00				
	į	**	3	1	5	ž	Cyl	ಕ			
			19 89310	6.77570	.68320	42560	.11040	03550			
	*		00 G214A	8.50930	.61840	43069	.14670	04310			
	1.354	201.30	20111111	7.92530	47739	43620	,21750	03720			
	1.954		20.11.02	7.36720	.32285	-,43719	.29340	-,03510			
	1.954	20.00	20 06500	A 65620	15650	40980	.32710	02780			
	1.954	94.200	10 40340	5 87870	02649	38880	.31640	02950			
	1.954	007.86	19.00200	2.000.2	12740	37770	.30610	03750			
	1.954	100.105	19.61720	7 48440	31720	41940	30900	04350			
		99.279		16913	04090	.00258	.01060	.00036			
			1 2	7 07	INTENT INTE	2 04 CDANIENT INTERVAL = -5.00/ 5.00	00/ 5.00				
	Z.	REM NO. 100/ U	י ט אמיר -	3							
		190 .7	3	3	ð	CYM	CYN	<b>E</b>			
٠	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		÷	8.77380	.74060	- 34629	24080	04760			
	614.0			8.58330	67490	34460	-,23690	04640			
	5.479	05.20	10 57140	A.21156	.52900	32390	24380	04780			
		21.00		7.56590	38000	30310	17920	-, 03849			
		201.06		6.79250	.21010	27410	21320	03859			
		24.10		5.98895	.01679	23270	29630	02609			
		21.00	19.07310	5.71969	97450	20469	-,29570	02910			
	2.473	06.00	19.65330	7.62279	.37940	-,30320	18440	03410			
		GRADIENT	00589	16531	54126	.00765	00253	.00108			

PAGE 79

SREF = LREF = BREF = SCALE =

CATE 19 AUG 74

			MSFC 578 (SA10F)	142-IN	MSFC 578 (SAIDF) 142-IN SRB (159) NBEIS		(R918H	(R918H1) ( 01 NOV 73 )	( E5 VC
	REFERENCE DATA	<b>4</b> 1.					PARAMETRIC DATA	DATA	
SREF = LREF = BREF = SCALE =	. 5055 58. IN . 6055 IN. . 6056 IN.	XMRP :: THRP :: ZMRP ::	5.5570 IN. .0000 IN.			BETA = FWSTK = ATHRNG = CONFIG =	.000 .000 .156	PHI = AFTSTK = ATHS = SHDSTK =	11,250 .000 .050 .050
		RUN NO.	167/ G RN/L =	5.02	GRADIENT INTERN	RUN NO. 167/ G RN/L = 5.02 GRADIENT INTERVAL = -5.00/ 5.00			
			•		į	MAN CANA	Ē		

. 92480	.04050	.05340	. 04070	. 95279	.01925	.03270	. 03820	.00027	į	3	.00520	05040	00030	09670	.01140	-, 00190	.01350	.00550	00022
38900	1.17819	3.17420	3,39560	2,70120	1.98240	1.95430	3.25860	05627	00/ 5.00		47946	-,22259	.63580	1.15710	.74780	.88230	1.09360	1.10350	-, 06960
98710	-1.03840	-1,17659	88150	.32230	.36970	.28890	79870	-,08368	RVAL = -5.	ž	17100	.17655	17970	.15100	.12830	,04230	.04879	.14565	.00697
-1.64180	-1,59679	-1.22610	90750	66300	-,30560	16100	06696	97445	ADIENT INTE	ฮ	-1.67380	-1,54150	-1,26520	-1,01219	63970	26520	98199	-1.01210	07990
-8.64620	-9.09280	-9.39576	-9.01225	-6.01900	-6.87190	-6,33369	-8.66140	-, 13403	6.33 GR	Ę	-9.63810	-9.86350	-10,13620	-2,03820	-8.12930	-7.08400	-7,19229	-9.11130	-,15264
7.94590	8.44900	9.61420	10.72910	11,43625	12,01739	12,19925	10.54569	21847	G RN/L =										
129.810	127.920	123,920	119 A90	115.885	111.900	110.000	119,900	GRADIENT	ģ	ALPHA	129.540	127.629	123, 580	119,600	115.580	111.610	109.716	119,590	GRADIENT
599	95	9	9	9	9		667	•	S.	M3CH	600		256	206	600	6	200	200	!
	129,810 7,94500 -8,64620 -1.6416098710 .38900	129.810 7.94500 -8.84620 -1.6418096710 .38950 127.920 8.44900 -9.89280 -1.58679 -1.03840 1.17819	129.810 7.94590 -8.84620 -1.6418096710 .38990 127.920 8.44900 -9.99280 -1.50679 -1.03840 1.17819 123.920 9.81420 -9.39570 -1.22610 -1.17659 3.17420	129.810 7.94590 -8.84620 -1.6418098710 .38990 127.920 8.44900 -9.99280 -1.50679 -1.03840 1.17819 123.920 9.61420 -9.39570 -1.22610 -1.17659 3.17420 119.840 10.72910 -9.012209075088150 3.39580	129.810 7.94590 -8.64620 -1.6416096710 .38990 127.920 8.44900 -9.99280 -1.59679 -1.03840 1.17819 123.920 9.61420 -9.39570 -1.22610 -1.17659 3.17420 119.890 10.72910 -9.012209075068150 3.39560 119.880 11.43620 -8.0190066309 .32230 2.70120	129.810 7.94590 -0.04620 -1.6418098710 .38990 127.920 8.44990 -9.99280 -1.59670 -1.03840 1.17810 123.920 9.61420 -9.39370 -1.22610 -1.17659 3.17420 119.800 10.72510 -9.012209975088150 3.39580 115.800 11.43620 -8.0190966309 .36239 2.70120	129.810 7.94500 -0.04620 -1.6418098710 .38900 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 125.920 9.61420 -9.30370 -1.22610 -1.17650 3.17420 119.890 10.72910 -9.012209075068150 3.39560 115.890 11.43620 -6.0190066300 .36270 1.36320 11.43620 -6.819030560 .36270 1.98240 110.000 12.01730 -6.8719030560 .28890 1.95430	129.810 7.94500 -0.04620 -1.6418098710 .38900 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 125.920 9.61420 -9.09280 -1.2610 -1.17650 3.17420 119.890 10.72910 -9.012209075088150 3.39580 115.880 11.43620 -8.0190066300 .32230 2.70120 110.900 12.01730 -6.8719030570 .36270 1.98240 110.900 12.19020 -5.335016100 .28890 1.95430 119.900 10.34560 -8.651409699079870 3.25860	.599 129.810 7.94500 -0.04620 -1.6410096710 .38900 .02480 .3599 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 .04050 .3599 127.920 9.61420 -9.39570 -1.22610 -1.17650 3.17420 .05340 .95340 .399 119.890 10.72910 -9.012209975088150 3.39580 .04070 .359 115.880 11.43620 -6.0190066300 .35270 1.98240 .05270 .9599 111.900 12.01730 -6.8719016100 .28890 1.99540 .03270 .35770 3.599 110.900 10.34560 -8.661409699079870 3.25860 .03820 .03820 .35820055670636805567 .00027	129.810 7.94500 -0.04620 -1.6418098710 .389500 127.920 8.44900 -9.99280 -1.59670 -1.03840 1.17810 123.920 9.61420 -9.99280 -1.59670 -1.03840 1.17810 119.890 10.72910 -9.09280 -1.9075088150 3.39580 119.890 11.43620 -9.012209975088150 3.39580 1111.900 12.19920 -6.8790036500 3.36970 1.98240 110.900 12.19920 -5.3356016100 2.28890 1.98430 119.900 10.34560 -8.6614096990079870 3.25860 1.98430 1.9456013403074400836803627	129.810 7.94500 -0.04620 -1.6416096710 .389500 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17610 123.920 9.61420 -9.39570 -1.25610 -1.17650 3.17420 119.890 10.72910 -9.012209075068150 3.39580 119.890 11.43620 -8.0190066300 .36270 2.70120 111.990 12.101730 -6.8719036550 3.5070 1.98240 110.000 12.19020 -6.3356016100 2.28890 1.95430 119.900 10.54560 -8.661409699079870 3.25860 6RADIENT INTERVAL = -5.00/ 5.00 A.PHA CAM CLM CA CYM CYNH	129.810 7.94500 -0.04620 -1.6418098710 .389900 127.920 8.44900 -9.09280 -1.56670 -1.03840 1.17810 123.920 9.61420 -9.30570 -1.22610 -1.17650 3.17420 119.900 10.72910 -9.01220 -1.92610 -1.17650 3.39580 111.900 12.19720 -6.01950965300 .36270 2.71120 110.900 12.19720 -6.8790036500 3.6970 1.98240 110.900 12.19720 -6.8356016100 .28890 1.95430 119.900 10.54560 -8.661409699079870 3.25860 CRADIENT2184713403074450836805627 ALPHA CNM CLM CA CYM CYNH 199.840 -9.63810 -1.67380 .1710047040	129.810 7.94500 -0.04620 -1.6416096710 .389000 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 123.920 9.61420 -9.30570 -1.26610 -1.17650 3.17420 119.890 10.42510 -9.012209975068150 3.39580 1115.890 11.43620 -6.819509075068150 3.39580 111.900 12.19720 -6.8719096500 .36270 1.98240 110.000 12.19720 -6.8719016100 .26890 1.95430 119.900 10.445016100 .26890 1.95430 119.900 10.4450164709699079870 3.25860 GRADIENT21847134030744508368036270549079870 3.25860 129.540 10.72040 -9.63810 -1.67380 .1710047140 129.540 10.72040 -9.63810 -1.67380 .1760022250	129.810 7.94500 -0.04620 -1.6416096710 .38900 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 123.920 9.61420 -9.39576 -1.22610 -1.17659 3.17420 119.890 10.72910 -9.012209975068150 3.39580 111.900 11.43620 -6.0190096500 .36270 1.98240 110.090 12.19020 -6.335016100 .26890 1.95430 119.900 10.4450 -8.661409699079870 3.25860 6RADIENT2184713403074450636805627 ALPHA CNH CLM CA CYM CYNM 129.540 10.72040 -9.63810 -1.67380 .1710047140 127.520 11.36950 -9.63810 -1.5750 .1767022250 127.620 11.36950 -9.63810 -1.56380 .1770022250	129.810 7.94500 -0.04620 -1.6416096710 .38900 127.920 8.44900 -9.09280 -1.50670 -1.03840 1.17810 123.920 9.61420 -9.39576 -1.22610 -1.17659 3.17420 119.890 10.72910 -9.012209075068150 3.39580 111.900 11.43620 -6.8190036500 .36270 1.98240 110.000 12.19720 -6.8719036500 .36070 1.98240 119.900 10.54560 -6.8338016100 .28890 1.95430 119.900 10.54560 -8.661409699079870 3.25860 6RADIENT2184713403074450836805627 ALPHA CAM CLMM CA CYM CYNM 129.540 10.72640 -9.63810 -1.67380 .1770047540 127.620 11.36950 -9.63810 -1.67380 .1770047540 127.620 11.36950 -9.63810 -1.56150 .1760022250 123.580 12.51070 -1.013020 -1.50120 .15700 1.15710	129.810 7.94500 -0.04620 -1.6418098710 .389500 127.920 8.44900 -9.99280 -1.50670 -1.03840 1.17810 125.920 9.61420 -9.99280 -1.50670 -1.03840 1.17810 119.890 10.72910 -9.09280 -1.50670 -1.03840 1.17810 119.890 10.72910 -9.012209975068150 3.39580 119.890 11.43620 -6.8190036570 .36270 2.77120 110.900 12.19020 -6.33360161900 .28890 1.95430 119.900 10.54560 -6.3336016190079870 3.25860 159430 119.900 10.5450 -0.13403074400836805627 ALPHA CAM CLMM CAM CAM CAM CAM CAM CAM CAM CAM CAM C	129.810 7.94500 -0.04620 -1.6418098710 .389500 127.920 8.44900 -9.99280 -1.59670 -1.03840 1.17810 125.920 9.61420 -9.39570 -1.25610 -1.03840 1.17810 119.890 10.72910 -9.09280 -1.59670 -1.03840 1.17810 119.890 10.72910 -9.012209975088150 3.39580 119.890 11.43620 -8.01900565300 .32230 2.70120 110.900 12.19020 -6.3356096530 .36270 1.98240 119.890 10.54560 -8.661409699079870 3.25860 1.94340 119.900 10.54560 -8.661409699079870 3.25860 1.94340 119.900 10.54560 -8.661409699079870 3.25860 119.900 10.54560 -9.661409699079870 3.25860 1.94340 12.516700374400836803627 -0.04490836803627 -0.04490836803627 -0.0449004440026250 1.15690 1.15710 1.15710 1.15710 111.610 14.9613026320 .04230 .04230 .88230 111.610 1.4.9613026320 .04230 .04230 .88230	129.810 7.94500 -0.04620 -1.6418098710 .389500 127.920 8.44900 -9.99280 -1.59679 -1.03840 1.17810 125.920 9.61420 -9.39570 -1.22610 -1.77650 3.17420 119.890 10.72910 -9.09280 -1.22610 -1.77650 3.17420 119.890 11.43620 -8.0190066300 3.2230 2.70120 1119.900 12.19020 -6.3356066300 3.26890 1.98430 119.900 10.34560 -8.661409699079870 3.25860 1.94350 119.900 10.34560 -8.661409699079870 3.25860 1.94250 12.58471340307449083680362705670 1.99240 119.640 0 12.5040 -9.63810 -1.673807987047240 129.540 11.36950 -9.66310 -1.67380 -1.797047240 129.580 12.51770 -9.63810 -1.67380 -1.797047240 129.580 14.96130 -7.08220 -1.26220 -1.57270 -6.3580 11.36950 -1.26220 -1.01210 -1.7970 -6.32850 11.5610 14.96130 -7.08420 -0.04230 -0.04230 10.9360 -7.50480 -7.08420 -0.04230 -0.04230 10.9360 -7.19220 -0.04230 10.9360 -7.19220 -0.04230 10.9360 10.9240 -0.09360 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.04230 10.09360 -7.19220 -0.004230 10.09360 -7.19220 -0.004230 10.09360 -7.19220 -0.004230 10.09360 -7.19220 -0.004230 10.004230 10.004230 -0.004230 10.004230 -0.004230 10.004230 -0.004230 10.004230 -0.004230 10.004230 -0	129.810 7.94500 -0.04620 -1.6418098710 .38900 127.920 8.44900 -9.09280 -1.50670 -1.0340 1.17810 123.920 9.61420 -9.09280 -1.25610 -1.17650 3.17420 119.980 10.7251 -9.012209975068150 3.39580 119.980 11.43620 -6.819909075088150 3.39580 119.990 12.19020 -6.8336016100 .28890 1.95430 110.900 12.190201340316100 .28890 1.95430 119.900 10.54560 -9.661409699079870 3.25860 6.8614721847134039699079870 3.25860 1.95430 119.900 10.72640 -9.63810 -1.6738079870 3.25860 122.540 10.72040 -9.63810 -1.67380 .1700047940 129.480 113.8950 -9.63810 -1.67380 .1700047940 129.580 12.51070 -1.03210 .1750022250 123.580 14.4470 -9.63810 -1.67380 .17500 -1.5710 1115.80 14.44470 -8.12930 -1.65220 .17970 .63580 1115.80 14.44470 -2.03820 -1.03210 .17500 .44780 113.590 13.52740 -7.08400 -1.67380 .17500 .175710 1115.80 14.44470 -2.1320 -1.03210 .17500 .04230 .88230 113.590 13.59640 -9.1130 -1.01210 .14560 1.10350 1.10350 113.59640 -9.1130 -1.01210 .14560 1.10350 1.10350

35	NO. 165/ 0	•	RN/L =	6.75	GRADIENT INTERVAL = -5.00/	RVAL = -5.0	0/ 5.00	
W. A.C. W.	At PHA		N.	3		E C	CYNM	J B
200	129 570		3.57810	-3.7147		.15136	.15320	.02880
	127 670		4.2929	-3.2667		.15170	.12570	.02890
200	124 KAN		47920	-2.5595		.13570	.27269	. 55930
1.502	110 650		6.37040	-2.2176		07950	.38135	. 52229
1.505	20.511		7 2:130	-1.3470		.09570	.27950	.99770
1.506	20.011		7.95820	6493		.06945	.47675	.91719
202.1	109.7601		18.24625	-,15479	045440	. 56585	.48445	.01510
606	119.668		6.28799	-2.9971		.58139	.41320	.00490
	CCARIENT		23144	-, 1712		. 55481	51716	. 00066

PAGE 61	(R916N1) ( 61 NCV 75 )	PARAMETRIC DATA	00 PHI = 11.250 00 AFTSTK = .000 00 ATHS = .000 00 SMOSTK = 0.000			EQ.	20	20	90	10	50	40	20	91
	Ë	PARANE	BETA = .000 FWDSTK = .000 ATHRNG = .100 COMFIS = 6.00	5.00	_	.02320 .02920								
	SI:		<b>8</b> E 4 S	GRADIENT INTERVAL = -5.00/ 5.00		.25140								
MSFC TUT 578	MSFC 578 (SA10F) 142-IN SRB (139) MDE1S			GRADIENT INTE		0 -1.68530								
TABULATED SOURCE DATA, MSFC TUT 578	SA10F) 142-IN		żż	RN/L = 7.11							2,83620			
TABULATED S	MSFC 578(		5.5570 IN. .0000 IN.	148/ 9		124.716 12.69410			9.855 15.63290				9,810 15,50450	
		RENCE DATA	SQ. IN XMRP : IN. YMRP : IN. ZMRP :	RUN NO.		. 963 -								•
DATE 19 AUG 74		REFEREN	. 5005 S											
DATE 19			SREF = LREF = BREF = SCALE =											

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25	Ğ	104/ 0 RN/L =	6.96	GRADIENT INTE	INTERVAL = -5.00/	0.8.00	
277	At PHA		¥	. ฮ	CYM	CYNH	GP.
	100 000		93610	-2.04550	.32160	12590	.0467
	197 07		1.17970	-1.92370	.34249	13380	.0533
	101		1.62700	-1.63270	.35116	13450	.0534
	163.34 4.0 06.		2.02020	01652.1-	.33740	06860	.0759
	20 311		2.29060	92320	.34070	-,13489	.07400
2.473	20.611		2.95970	62739	34030	-,16260	.0677
4.4.5	110,030	17.26840	3.34450	-,48860	.34020	14570	.0597
7.479	119.96		1.59830	-1.25490	.34110	09370	. 0649
	COADTEN		11403	98511	-, 69035	.00120	0009

NEESS
(139)
SRB
142-IN
578 (SA10F)
NSF C

S (R918J1) ( 01 NOV 73 )	PARAMETRIC DATA	BETA = .000 PHI = 11.250 FNDSTK = .000 AFTSTK = .000 ATHRWG = .100 ATHS = .000 CONFIG = 6.000 SHDSTK = 6.000
NSFC 578 (SAIGF) 142-IN SRB (139) NDE1S	REFERENCE DATA	-5050 54. IN XMRP = 5.5570 IN8000 IN. YMRP = .0000 IN8000 IN. ZMRP = .0000 IN.
		SREF = LREF = BREF = SCALE =

5.00
-5.00/
**
INTERVAL
GRADIENT
4.97
н
RN/L
0
787
RUN NO.

HYVA	A: 44 IA	CN	<b>E</b>	ฮ	CYN	CYNM	J <b>e</b> J
494	179.059	54580	-1.36500	-1.54720	.04590	-, 03260	01340
861	168.050	.86720	-1,65670	-1,65270	.05670	05450	01176
866	164.030	1.33595	-2.24780	-1,79510	06539	n7760	02660
80.40	159,935	2, 92153	-2,66789	-1,93540	13210	13870	01950
868	155.840	2,69000	-2.94820	-2,13989	-,13259	04740	61229
100	151.740	3,48199	-3,25220	-2,27520	-,22340	23190	01249
86	149.610	3.94229	-3.55390	-2.3198	19125	53270	-, 00360
.596	159.940	1.99289	-2.61970	-1.94150	12570	15490	.00340
	GRADIENT	16626	.15238	. 93843	.01401	.61719	09941

S. 8
-5.00/
0
INTERVAL
GRADIENT
6.26
RN/L =
£
27/ 0
RUN NO.

MACH	AL PHA	3	₹3	ర	£,	CYNM	9
808	170.000	74770	28380	-1.81930	.04968	.03190	01790
	167.980	1,01910	66380	-1,90520	.67799	-, 02130	00680
464	163.900	1.59550	-1,32320	-2.15575	.04195	14980	00980
464	159.750	2,23996	-1.94845	-2.25325	15930	24920	-, 51359
-	155.560	3,05429	-2.68940	-2,41440	22910	22759	00520
	151.390	3.98330	-3,29470	-2.48740	29550	-,14220	-, 95829
*	149,350	4.69295	-3,85000	-2.51450	45480	.57e10	01220
1 60 1 60 1 60 1 60	159,750	2,25250	-2.00330	-2,28560	18710	-,24529	01649
	GRADIENT	-,19528	.16687	.03445	. 02445	-,01139	-, 00025

#### 26/ 0 RN/L = 6.65 GRADIENT INTERVAL = -5.00/ 5.00 RUM NO.

					;		į
MACH	ALPHA	Ş	₹	ð	£		<u></u>
101	164.420	04340	-1.84800	-2.54090	10890	.06270	05499
197	167. A50	1.22030	-2.24270	-2.60510	.05660	65410	90840
1 197	163.650	1.92300	-3.67740	-2.64300	14440	00320	00310
107	159.400	2.87899	-3,62720	-2,72619	06619	.27175	-, 59359
	155 080	4.23480	-4.51570	-2,61240	01740	-, 86359	00590
10, 1	150.740	6.17500	-3.95690	-2,96289	-,11870	-1.26169	61599
461	144.690	6.85560	-4.39369	-2.95830	04559	-,38440	01149
1.197	159.410	2.86949	-3.81690	-2.73499	08880	.28560	99679
•	GRADIENT	20329	.11373	. 52521	.05630	. 54576	. 99934

DATE 19 3UG

1.

(R91CB1) ( S1 NOV 73 )

TABULATED SOURCE DATA, MSFC TUT 578

REFERENCE GATA  .5030 58. IN XMRF = 5.5570 IM.  .0050 IN. YMRP = .0050 IM.  .0050 IN. ZMRP = .0050 IM.  .0056 IN. ZMRP = .0050 IM.	PARAMETRIC DATA	= .005 PHI = 22.500 K = .005 AFTSTK = .000 G = .100 ATHS = .000 G = 6.050 SHÖSTK = 6.000
CATA IN XMRP = YMRP = ZMRP =		
	REFERENCE GATA	n dini n dini n dini n

	200																																				
	AFISIR :		AISONS																																		
	000	061.	0.00			<b>.</b>	01630	. 20399		99769	. 51616	.05220	.04695	99725	. 60301		j E	05730	.09249	00130	. 06779	.01770	01820	.03460	nacin.	.00188		<b>ə</b>	. 00500	. 05965	05779	.00315	. 61430	.01389	. 91489	. 99709	.09577
		ATHENG	10 H 10 H	-5.00/ 5.00		CYNH	.12249	. 05950	46459	-1.26099	-1.63476	-1.37649	75489	-1,27330	96697	-5.30/ 5.30	CYNM	.18165	.11910	-,11500	-,35190	87659	59910	.01580	36720	02790	-5.00/ 3.60	CYNE	66269	11150	36789	28335	22250	, 09159	.35645	-,23530	.01368
				PVAL = -5.		N.A.O	.02740	.10350	.41279	.83750	1.09980	1.31350	1.58699	. 63730	.07670		CYN	01446	.07530	.40690	.41910	.79080	.63210	.67219	.44789	. 03434		Š	.05265	. 59155	.23739	.26370	.22329	.22540	.29110	.26400	.09663
				COANTENT INTERVAL =		5	.92590	.95480	.96190	.96115	.93785	.66050	. 85683	.98630	05452	GRADIENT INTERVAL =	ಶ	1,12530	1.15250	1.15630	1.15375	1.15210	1.03669	1.01440	1.17240	0907	GRADIENT INTERVAL =	5	1.63360	1.66530	1.69500	1.67150	1.58600	1.49615	1.48470	1.66860	10862
				20 20 20		3	3968.	.63360	1,19500	1.89145	2.85630	3,79100	4.13850	1.65415	.18987	6.31 GR	3	04349	.01950	.51629	1.61799	3.17445	5.25340	6.14719	1.59110	.35689	6.75 6	¥.	.58470	1.00550	2,17660	3.94980	5.82630	7,59800	8,56930	3.98380	.36456
5.5370 IN.	.9555 IN.	.0000 IN.			- KW/L -	3	.96810	1.24569	1.63219	2.47690	3,17239	3.97689	4.48179	2.49320	.17924	D RN/L =	3	1.12776	1.45115	2.07640	2,64320	3.66660	4.66780	5,30500	2.84670	.19892	O RN/L =	Š	1.18910	1.48300	2,18989	3.16650	4.42220	5.91660	6.75669	3.16439	.26172
10	11	11			MO. 347 C	AH PHA	9.960	11,920	15.960	20.930	24.139	28.239	39.169	20.030	GRADIENT	NO. 33/ 0	YHO IY	10.010	11.990	16.065	20.230	24.429	28.680	39.679	20.239	GRADIENT	RUN NO. 32/ 0	A1 PMA	10.090	12,110	16.269	20.530	24.850	29.210	31.280	20.530	GRACIENT
TX XX				į	RUM NO.	MACH	597	765.	165	1997	766.	765	765	597		RUN NO.	3		000	500	000	006	506	906	506		#D#	7	, .	9		96			1.196	1.196	•
N S8 C	IS IN.	15 IN.																																			

PAGE 85	( 61 WOV 73 )		TX = .000 000 TX = .000																					
	(8)(8)	PARAMETRIC DATA	.000 PHI .000 AFTSTK .100 ATHS		<b>16</b>	. 90050	,00000	, 00000	00000	, 60067.	. 00000	. 90000	. 65555	. 00999		18	. 09000	. 00000	.00000	. 00000	. 99990	. 65556	20000	
		IV.	BETA = Fuostk = Athrn6 = Config =	00' 2'00	CYN	.07960	.05170	08360	08410	.11030	.16780	.04270	09250	. 66376	307 5.00	CYNM	02990	.01530	.01950	01700	.01560	55419	n:550	COCUL
	•			VAL = -5.0	Cit	.02343	.04010	.07629	.07340	.05180	.02350	. 52945	. 59885	00045	VAL = -5.0	£	99279	.01639	.00569	.05610	.01249	.01559	.00060	
Teff 578	(139) MBE1:			GRADIENT INTERVAL = -5.00/ 5.00	ฮ	1.24060	1,22739	1.22299	1.26780	1.26950	1.28859	1.39579	1.24779	.00334	CRADIENT INTERVAL = -5.00/ 5.00	5	.78170	. 62275	.87689	.94410	1.03700	1.12699	1,16191	
TABLULATED SOURCE DATA, MSFC TIST 578	MSFC 572(5A1SF) 142-IN SRB (139) MBE15			6.94 GRA		1.75610	2.40990	3.79660	4.67170	4.93145	5,10239	5.24195	4.56760	.15938	7.09 GRA	*	1.96470	2,09060	2.29010	2,46330	2.54129	2.82769	3.00510	
TEG SOURCE (	572 (SA10F)		5.5570 [N. . 9999 IN. . 9999 IN.	RN/L =	3	1.22040	1.59420	2.61365	3.96389	5.44250	7,02820	7.76650	3,96359	.31369	ENAL =	ā	1.35490	1.00650	2.78640	3.67889	5.07700	6.45579	7.03190	
TASULA	MSFC		H H H	RUM NO. 62/ 0	AN PHA	10.299	12.250	16.500	20.000	25.090	29.360	31,499	29.799	CRADIENT	RUN NO. 79/ 0	At Data	15.149	12.120	16.200	20.360	24.520	26,690	30.650	
		REFERENCE BATA	.5939 50. IN MRF .6553 IN. YMRP .6593 IN. ZMRP	<b>N</b> ⊃#	T T T	1.965	1.963	1.965	1.965	1.965	1.965	1.965	1.965		R	7777	17. K	5.473	5.479	3,479	3,479	3.479	3,479	
CATE 19 AUG 74			SKEF = .9 LREF = .0																					

#### MSFC 578 (SAIDF) 142-IN SK8 (159) NBEIS

TABLEATED SOURCE DATA, MSFC TUT STR

(R91CD1) ( 81 NOV 73 )

ARAMETRIC DATA	10 PN1 = 22.500 15 AFTSTK = .000 15 ATHS = .000 10 SHDSTK = ?.000
PARAME	.000. 000. 100. 000.
	BETA = FWDSTK = ATHRNG = CONF.16 =
	5,5578 IN. .0000 IN.
	6 G G
	2007 1707 2007
REFERENCE DATA	. 8050 58. 1M . 8050 1M. . 8050 1M.
	\$64[6 = \$54]

# RUN NO. 254/ 9 RW/L = 4.91 GRADIENT INTERVAL = -5.00/ 5.09

AL PHA		5	ಶ	K.	CYN	<b>ಕ</b>
50.249		8.59650	.47090	63130	-1.65613	.02830
52.210		9.85680	.39850	26360	-2,75150	.04670
56.240		11,17829	.29419	04650	-3,15420	.03195
60.270	•	12.73220	.0759	18670	-1.29930	. 03990
64.290		12.79160	95249	11299	1.05360	53469
66.289		12,62169	14669	57619	.18590	.05325
76.185		12.58729	18925	54885	.53210	.00789
69.270		12.96049	. 97479	12530	-1.96639	01500
SRACIENT	.22421	.19420	03333	05536	.17885	-, 05229

#### RUN ND. 205/ 0 RN/L = 6.22 GRADIENT INTERVAL = -5.53/ 5.00

2	AI PWA	ž	¥ 5	<b>ರ</b>	£	CYN	ಕ
	50,660	11.82520	15,65358	.58450	10150	.64520	.00070
	52.600	12,59770	16.85210	.50010	04110	.42629	.0920
	56.660	13,44210	18,69390	.37430	01970	1.26290	.00910
-60	69.69	14,52990	19.37129	.29279	23550	.36870	00730
	64.589	15,13310	18.56560	.23820	16859	.16550	90659
	009.49	15.31799	16,12815	.19265	27610	.28510	-, 01255
	70.470	15,42600	15.29330	.21740	32210	. 56649	.01490
661	60.690	14.54679	19.39225	.29250	23650	.38420	00610
	CRADIENT	110505	03378	01868	01339	01782	00026

#### RUN NO. 206/ 0 RN/L = 6.62 GRADIENT INTERVAL = -5.00/ 5.00

777	AI PHA	3	T.	J	CYN	CYZ	ಕ
				00000	14066	19440	06650
1.195	50.659	14, 52555	12.36160	1.01.00	2000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
***	52.540	14.63465	12.89510	.94620	36819	.12360	.05319
	96 649	15. A7350	13.55345	67029	36890	. 91649	. 52479
	67 670	16.7840	15.04350	63345	36890	n999ū	. 64950
	7	17 69560	01012.71	. 80369	31899	-, 05629	.05575
	646.54	18.47650	13.69599	.71519	-,29229	13269	.03040
	20.500	14.74780	12,76419	.66550	31659	12119	. 55455
	677-660	16,73319	14,65919	.84090	3775B	13470	. 02469
	CRADIENT	.23861	.63374	91569	. 55559	01477	59919

37.
5
MSFC
DATA.
SOURCE
TABULATED
•

3974

19 3974	( 82 AON 10 ) (1021621)	PARAMETRIC DATA	= .000 AFTSTR = .000 = .100 ATMS = .000 = .100 SHOSTR = 0.400
TABULATED SOURCE DATA, MSPC TUT 576	45°C 576(5A15°) 142-IN SRB (139) MBC18		5.5570 IN. FLOSTK .0005 IN. ATHENG.
CATE 19 AUG 74		REPERENCE BATA	SAEF E

RUM NO. 136/ 0 RH/L = 7.17 GRADIENT INTERVAL = -5.00/ 5.08

- 02770 - 00710 - 01340 - 01210 - 01210 - 01460 - 01650 - 00022	
CTMM157701174015770157701577015770155701657009790097915	
CTM - 29860 - 30350 - 32950 - 32950 - 32950 - 33570 - 33570 - 33570 - 35500 -	
CA 1.34200 1.32619 1.29429 1.14466 1.05150 1.214446 1.214446	
7.39300 7.66530 6.43150 6.75415 9.10310 10.01920 6.0550	
CNA 13.99690 14.45879 15.72809 16.73740 17.63780 18.7403 18.96669	
50,490 50,490 52,490 56,490 60,470 64,510 66,530 70,440	
1,963 1,963 1,963 1,963 1,963 1,963	

RIM NO. 192/ 0 EN/L = 7.01 GRADIENT INTERVAL = -5.00/ 5.00

3	Ale and	3	0	ij	CYR	CAR	ð
				41414	-	25000	13670
473	50.350	13.03720	4.79650	31604.1	2065.	3000	
	47. 21.0	13.62570	5.19620	1.43220	36590	05050	-, 52925
		25640	A. DSAGO	1.42040	30119	92250	92696
		67674 31	7. 03402	1.36620	29770	95450	01900
	2000	DE KOVER	A. 01040	1.25999	20160	98219	02169
			A 56750	1.12599	26490	09410	92260
	20.00	0.400	4.65356	1.05220	27999	15460	.01520
	817.07	15.75979	7,92919	1.36490	30549	62466	02910
	CAADIENT	24164	20373	01934	.95164	00290	.09162

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(R91CF1) ( E1 MOV 73 )

8457 : SCALE :

#### MSFC 578 (SAIGF) 142-IN SRB (159) MBE15

HEFERENCE BATA	: DATA								PARAMETRIC DATA	. DATA		
42 640	A THE	,,	5.55	5.5575 IN.				BETA =	.090	PR	22.560	
77			č	0000 IN.				FLOSTK =	. 996	AFTSTR =	.000	
- 11		 		N. 0000				ATHSNC =	100	ATHS =	050.	
1222 IN.	Mile Z		í	• • • • • • • • • • • • • • • • • • • •					000	SHOSTK =	8.500	
9326										•		
	\$	RUN NO. 2357 G	0 /5	RNAL =	76.7	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.1	00.¢ /00				
	3	410		ž		ಶ	Ě	MAKE S	ಕ			
	7 T	150		12.38720	8.04645	13400	.07180	01263.	.05450			
		82, 939		2.24949	6.97745	.25590	.27070	.2962	.03750			
		85.490		12.49970	4.97519	.25510	22662.	09960	.0400			
	765	39.940		12,62019	2,79960	.31670	.26869	28630	.01630			
	785	CHE NO		12.53730	1.51695	.39829	.1453#	.28350	.05149			
	234	97.910		12.45740	01255	.36685	16491.	78590	.03465			
	75	267.292		12,44535	99239	25162.	12021	17480	.05629			
	594	89.950		12,65439	2.82859	.33195	.19863	24136	.04810			
		<b>GRAD!ENT</b>		.95669	-,45638	\$9655.	00169	.03799	00189			
	2	RUN ND. 236/ S	6 /91	RN/L =	\$.24 G	GRADIENT INTERMAS, = -5.00; 5.00	RV4. = -5.	00'\$ 2'00				
	MACH	A PKA		ž	¥	5	Ç	CYN	ಕ			
	000	89.359	_	16.66953	15,46875	143641	25680	-,33530	.05800			
	\$	82.230		16, 15660	9.63575	43160	25390	35545	29780.			
	<b>.</b>	26.160		16.47425	7.41489	43090	20769	11970	.05370			
	3	60.02		16.64430	4.85939	48479	-,22690	.01920	.03260			
	6	94.029		16.63630	2.61990	. 55226	25449	. 67560	. 92169			
	200	97.955		16,24169	.61442	.34665	22895	,63176	.01770			
	90	99.810		16.07169	52470	36790	21219	-, 00400	.02719			
	606	99.070		15.68340	4.83919	.46710	23550	.03670	.03479			
		CRADIENT		. 55368	57279	55547	.96186	.01914	50215			
	2	RUM NO. 23	257/ 0	KN/L =	99.9	GRADIENT INTERVAL =		-5.00/ 5.00				
	MACH	A11 P14		¥	¥,	3	ž	CYN	160			
		80.420		19.61610	9.45270	.50105	36740	59560	. 50690			
		82.310		13.58675	9.09370	.58060	35640	11376	. 51165			
	1.198	86.278		19.06739	8.36979	. 50940	32259	-, 05910	. 98359			
	1.199	90,230		20.16670	7.26760	.36410	31379	51835	. 51569			
	1.199	94.229		20.25370	6.59330	.21149	32236	-, 66199	. 05645			
	1.199	98.218		20.18380	5.73570		29779	. 61265	. 59265			
	1.199	100.069	63	29.01729	5.22620	•	35376	. 05675	. 51.675			
	1.19	90.238	20	20.25030	7.24575	.34255	31499	53525	. 91120			
		GRADIENT	<u> </u>	. 52572	21562	93431	. 05368	11156.	.09019			

PAGE 89	(R91CF1) ( 81 NOV 73 )
TABULATED SOURCE DATA, MSFC TWT 578	MSFC 578 (SA19F) 142-IN SRB (139) NBE15
DATE 19 7.06 74	

MSFC 576(SA19F) 142-IN SRB (139) NBE1S 5.5570 IN. .0000 IN.	NSFC 578 (SA19F) A XMRP = 5.5570 IN. YMRP = 0000 IN. ZMRP = 0000 IN.
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4	SAM C	¥ 5	5	£	Z Z	<b>ə</b>
	19. 49400	6.81530	.69540	38270	11560	01980
) F	20.000.00	8.52730	.63130	-,37620	11510	02230
	20 17450	7.84945	.48120	36990	12480	02210
200	20 19480	7,17679	.32455	34415	-,13429	91179
2000	20 0000	6 48169	15990	32470	12970	01530
200	01960.03	A 71760	חאדכח -	36320	08610	-, 39975
0.22.0	19.40119		15030	20740	10829	92100
100.100	19.60000	2.55100	31000	14020	-, 12010	-, 02119
99.279	20,07840	100010	2010			**090
RADIENT	01398	-,17619	04135	.00460	tenna.	eccon.
RUN NO. 191/ 0	0 RN/L =	7.03 GR	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	00/ 5.00	
486	Š	¥	5	C.	CYNM	9
200	19.23310	8.71780	.74940	-,39100	15370	03050
2000	10 30870	A. 52000	.68269	-,38569	08710	03290
27.7	19.59840	8.56870	.53550	36060	-, 56580	04169
	19.66420	7.54460	.38670	34359	00790	04170
1.50	19.57649	6.82310	.22620	32940	04520	04970
04 120	19.25920	6.14650	.03310	30046	.01549	-, 05150
020	19.04360	5.89450	06670	29140	01110	04520
180	19.64580	7.55320	38600	34810	03640	-, 03900
1			1			10000

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(R91CH1) ( 01 NOV 73 )	PARAMETRIC DATA	.000 PHI = 22.500 .000 AFTSTK = .000 .100 ATHS = .000 000 SHOSTK = 8.000
	PAR	BETA = FWDSTK = ATHRNG = CONFIG = (
MSFC 578 (SA10F) 142-IN SRB (139) NBE1S		5.5576 IN. .0000 IN. .0000 IN.
	REFERENCE DATA	.5535 50. IN XMRP = .8555 IN. YMRP = .8555 IN. ZMRP = .0556

70	AI PHA		CLM	ಶ	CYM	CYNH	GBL CBL
	120 420		-9.08560		1.09100	.47049	. 65440
	20.671		ה הפאחה		.98450	1.18540	.03580
.599	127.935		30000		22120	0 64420	. 03660
.599	123.920		-8.93940		0.101		
000	110 015		-7.69469		.68390	.61840	.0520.
			7 19770		.78469	1.07830	. 03980
. 599	115.511				11050	GREEF	17710
.599	111.910		-6.33429		1.11333		
	000 000		-6.15280		.94825	1.17050	. u517.
700.	110.000				00260	49450	17770
665	119,930		-7.41400		200.0	1	
	<b>GRADIENT</b>	25314	-,15793		.00034	. 00959	.0004
3	RUN NO. 163	163/ G RN/L =	6.34	GRADIENT INTERVAL = -5.00/ 5.00	ERVAL = -5.	00/ 5.50	
				3	3	ANN	ë

5	Now work						
	AL CUA	ZNG.	W. TO	ð	CYM	CYNM	J E
_	477		50000	1 65011	26480	.15960	-, 01396
53	129.540	10.72620	13.0030	0100011			2000
5	107 520	11,42990	-9.53270	-1.54585	37740	10340	- 01000
3 9	20.121	10 64540	-0 A710G	-1.25840	.32119	.36080	. 00050
2	150.521	0+0+0*71	30000	0.1500	24470	.66259	.02090
13	119.600	13.42050	-9.14950	5166°-			00700
2	115,570	14.23790	-6.87479	-,65980	.25525	. 26341	00420
3 :		04440	7 70476	- 25440	.26599	.49230	.01559
8	111.085	15.03510				04004	00100
80	109,700	15.26680	-6.95180	58270	.24310	04074	0000
3 6	4.0 5.00	13.56469	-9.09230	-,99225	.23795	.68289	. 52250
3	100000	74400	0000	1798A	. 00342	-,01709	-, 00129
	COALIFICATION	100227	1.10753	100			

9.00
-5.00/
INTERVAL =
GKADIENT
6.75
RN/L =
164/ 0
RUN NO.

	410.4	2	¥	5	CYM	CYNM	æ
MACH	ALTIA	C3850	49416	-1.94156	.23960	57940	.62130
1.198	129.360	19.693961	13 08170	-1.81440	.22230	59145	. 02126
1.198	127.660	14.50.60	-2 57550	-1.51590	.19945	.03400	.01855
1.198	109.651	15.35.0	-2 11320	-1.27969	.11879	.24916	.05610
1.198	119.000	17 20250	-1.21160	92810	.15165	.27650	. 50395
1.198	113.650	18 78580	38269	-,58100	.13000	.21260	.00690
1.196	109.171	18,37590	14520	42680	.12690	.24380	. 62350
1.198	119.660	16.26425	-1.97679	-1.27089	.13869	19810	. 62270
	GRADIENT	23623	17759	57637	.05631	-, 01854	.05942

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MSFC 578(SALDF) 142-IN SRB (139) NBE1S

SREF = LREF = BREF = SCALE =

(R91CH1) ( 01 NOV 73 )

REFERENCE DATA	241											
5936 54.	=	S S S S S S S S S S S S S S S S S S S	**	5.55	5.5570 IN.				BETA =	669.	PHI E	22.580
.8955 TN.		TMRP ZMRP		8 8	.0559 IN. .9559 IN.				ATHRNG =	1.50	ATHS =	
.9056												
		Z E	RUN HO. 149/ 0	0 /61	RN/L =	7.15 GR	GRADIENT INTERVAL = -5.00/ 5.00	VAL = -5.0	00'8 /0			
	1	•	A: Dick		3	1	5	H.L	CYNH	5		
		. :	120 789	_	12,60390	13490	-1.66250	.27600	.01010	.02570		
			187 400		3,22600	20130	-1.79550	.28430	.03150	00600.		
	1.33				1 59540	1.17560	-1.56930	.30940	.03740	.00520		
	F (	តី :	200.C31		A 84950	1.34870	-1.23610	.33160	. 01960	.01649		
	,				15.04.25 16.89290	1.60150	91740	.33620	.04250	.01630		
	106.1	7 .			7 90470	2.06959	62285	.33510	. 06810	.01350		
	,	ī :	1111.111	• •	0.236.4	2.51890	48439	.30950	06771.	.00420		
	165.1	ī :	109.001	•	5.57920	1.66910	-1.21870	.30030	. 09830	06600.	,	
	r #	Ū	RADIENT	• 	28639	11967	07219	00231	00549	.00037		
		2	ō.	03/0	RUN NO. 103/ 0 RN/L =	6.96 GR	GRADIENT INTERVAL = -5.00/ 5.00	YAL = -5.(	00' 8'00			
		;	420	•	3	3	ð	E C	CTA	Ę		
		Ę į	֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	_	40040	1.04170	-2.05670	.29840	06510	.04310		
	n i	2 (	169.93		0.555.5	CERRIE .	-1.94280	.30010	04270	.04370		
	,	2 9	121.31		3 48510	1.94516	-1.65270	.36070	00800	. 03660		
	,	2 6	110 000		14.69410	2.50590	-1.29140	.29650	.02120	.03919		
					5.75039	2,71510	96250	.29350	.01680	.04569		
	•		276		16.76700	3,39630	63670	.29320	-, 00530	.04330		
	,	0.479	246 611		17,17610	3.57670	49220	.26160	.02779	.03959		
	,		20.01.		14.60430	2.46499	-1.28749	.29470	.02650	.03430		
	'n	2	113.00			1000	A CANA	02000	-, 00369	. 05556		

(R91CJ1) ( 01 NOV 73 )

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SREF : LREF : BREF : SCALE :

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WBE1S	
(139)	
SRB	
142-EN	
ASFC STB (SA10F)	
MSFC	

ANA CA. IN		H GOMX	5,55	5,5570 IN.				BETA =	. 900		22.500
. 6905 IN.	:	YMRP :	66.	.5550 IN.					000.	~	000.
. 6555 IN.		ZHRF =	20.	.0550 IN.					199	ATHS =	000.
.0556								1011101	. aaa	- A160F6	•
	ĕ	RUN NO.	29/ 0	RN/L =	5.00 68	GRADIENT INTERVAL =		-5.00/ 5.00			
	H	¥	A: PHA	Š	£	ð	CYN	CYNM	ą		
		170	170.020	.55190	-1.36180	-1.55310	01600.	01770	02650		
			164.060	76730	-1.63779	-1.66640	.01600	-,10450	-, 00429		
		3	164.020	1.36300	-2,26450	-1.79680	09340	18220	01749		
		1.50	149.930	1.98455	-2,67825	-1.95340	08140	28935	.00490		
	200	155	155.840	2,72369	-3.01129	-2,13160	12680	36620	02210		
	60.5	151	151.740	3,47650	-3.27500	-2.27120	19980	48220	-, 02900		
	8		149.810	3,93329	-3,59910	-2.32415	23669	56440	01940	;	
	808		159.930	1.98825	-2.66749	-1.95300	96490	-,28916	.00360		
		GRAD	GRADIENT	16676	.15529	.03801	. 51282	.02524	.09541		
	200	4	<b>₽</b> H <b>Q</b>	N.	C K	<b>ರ</b>	G.	CYNM	CBL		
	MACH	₹	ALPHA	Š	ב ל	5	E .	ENL	COL		
	.899		170.010	.71460	29840	-1.82790	.04140	06440	-, 00560		
	.899		167.990	1.00230	-,68200	-1.92925	.04420	09120	00730		
	.899		163,890	1.62050	-1.39700	-2.12160	62679	15980	00850		
	.899		159.740	2.27750	-2.03720	-2,28640	-,13610	33230	-,05730		
	.899		155.550	3.08610	-2.78830	-2.38250	17030	37570	- 00910		
	669.		151.370	4.03840	-3.49260	-2,46570	20810	41610	-, 50790		
	669.		149.370	4.54400	-3.82030	-2.49760	-,29480	33595	01310		
	.899		159.740	2.26999	-2,02915	-2,27660	12210	30629	01460		
		u	GRAD I ENT	-, 18369	.16975	.03226	.01694	.01657	.65522		
	ĕ	RUN NO.	31/ 0	RN/L =	6.72	GRADIENT INTERVAL = -5.00/ 5.00	RVAL = -5.	00' 2'00'			
	7047	4	AI PHA	¥	E C	ð	E C	CYNH	CBL		
	104		169.840	.95570	-1.87089	-2.53210	.04610	01430	09489		
			167-810	1,19370	-2.24440	-2.60830	. 94005	05110	.00280		
	10.		163,640	1.90750	-3.07310	-2,63690	01420	06530	00269		
	105		159,390	2.90770	-3.94930	-2.71760	18910	21485	- 3569ti		
	195		155,080	4.23240	-4.64170	-2,81430	-,11548	53729	05845		
	1.195		150.770	5.85290	-4.54930	-2.91995	08430	56969	00210		
	- 103		148.719	6.68960	-4,48419	-2.95670	65340	45730	00429		
	101		159,390	2.91200	-3.96190	-2.72499	17719	21830	01379		

#### (R91CJ1) ( B1 NOV 73 ) MSFC 578 (SA10F) 142-IN SRB (139) NBE1S

	. 000 . 000 . 000 8. 000
TIVE ONLY	PHI = AFTSTK = ATHS : SHOSTK =
TARAMEIRIC DAIN	BETA = .000 FLOSTK = .000 ATHRNG = .100 CONFIG = 6.000
	5.5570 IN. .0500 IN.
TA.	H FARE
REPERENCE DATA	. 5050 SB. IN 6050 IN 0550 IN
	SREF : LREF : BREF : SCALE :

ĕ
-5.00/ 5
**
INTERVAL
GRADIENT
6.9
RN/L =
63/ 9
RUN NO.

200	AH PHA	¥.	E C	5	CYN	CYM	<b>.</b>
	160 670	78130	-1.33450	-2.50100	01710	.01220	.00000
1000	019.601	2.000	1 6600n	-2.52590	04730	-, 08205	.0000
1.96	000.701	01060-1	20000	-2.56950	-,04100	08030	.00000
96.	163.64	1 245AU	-1.72650	-2.65199	02070	-, 05223	. 00000
305.1	159.300	4 53500	14799	-2.74350	01679	11850	. 99999
200	011.661	5.91980	89490	-2,77450	.01290	01670	. 00000
106.1	148.830	6.53170	61100	-2,79930	01835	.04169	. 09500
796	159.385	3,26819	-1.69750	-2.66650	02910	92560	. 00000
	GRADIENT	27902	03994	.01499	00150	00171	. 56550

## RUN NO. 78/ 0 RN/L = 7.91 GRADIENT INTERVAL = -5.00/ 5.00

CYNN CBL									
CYN									
CA	04004.3-	0902672-	-2.59640	-2.69560	-2,84370	-2.89699	-2,45430	-2,70130	06600*
CLY	62020	54129	47369	24895	07549	.00810	52589	24710	01663
2	.72510	1.03680	1.61040	2,70910	3.76789	4.95019	5,61859	2,71889	23739
ALPHA	170.000	168.020	163,930	159.790	155,620	151.460	149.450	159.790	GRADIENT
MACH	5.479	3.479	3.479	3.479	4 479	470	479	3.479	

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MSFC 578(SAIGF) 142-IN SRB (139) NBE1 GRIT			FADSTK =		11 20
	REFERENCE DATA	2000	THE STATE OF THE S	AT CEC.	

# RUM NO. 245/ 0 RN/L = 5.43 GRADIENT INTERVAL = -5.00/ 5.00

401         60.14G         10.35642         10.4145G        9446D        0777G         1.0076D         .0229D           401         62.02G         10.35649         9.1631G         .0247G        0677G         1.5669G        0154G           401         63.99G         10.1493G         6.7716G         .1869G         .1309G         1.4658G        0154G           401         93.95G         10.1223G         4.5516G         .2493G         .1358G         3.3437G        0541G           401         97.93G         10.1223G         2.9446G         .2606G         .1558G         3.3437G         .01489G           401         97.93G         10.1223G         1.4213G        0951G         1.6968G         4.2997G        1239G           451         99.85G         10.1254G         4.4265G         .2485G         .3417G         2.8476G         .5049G           461         99.85G         10.1254G         1.4265G         .2485G         .3417G         2.8476G         .5039G           461         99.85G         10.1254G         4.4265G         .2485G         .3417G         2.8476G         .5039G	ACH.	ALPHA	3	<b>Œ</b> J	<b>5</b>	¥.	CAN	<b>9</b>
62,020 10,35649 9,16310 ,0247006770 1,56690 85,990 10,14930 6,77160 ,18690 .13090 1,48580 89,950 10,12230 4,55160 .24930 .35710 2,86740 97,930 10,03540 2,02300 .0136922520 2,86189 99,850 9,9200 1,4213009510 1,69680 4,29970 89,955 10,12349 4,42650 .24850 .34170 2,84760 6,401871019344558800145 .04637 .14363		A0.140	10.35420	10.41450	94469	07770	1.06769	. 02900
85.990 10.14930 6.77160 .18690 .13090 1.48580 69.950 10.12230 4.55180 .24950 .35710 2.86740 93.950 10.12230 2.94460 .20860 .15580 3.34370 97.930 10.03340 2.02300 .0136022520 2.86180 99.850 9.92200 1.4213009510 1.69680 4.29970 89.955 10.12340 4.42650 .24850 .34170 2.84760 64ADIENT018344558800145 .04637 .14363	104	82.020	10.35649	9.16310	. 52470	-, 06770	1.50690	01540
69.950 10.2230 4.55180 .24950 .33710 2.86740 93.950 10.12230 4.94460 .20860 .15580 3.34370 97.930 10.03340 2.02300 .0136022520 2.86180 99.830 9.92200 1.4213009510 1.69680 4.29970 89.950 10.12040 4.42650 .24850 .34170 2.84760 64ADIENT018344558800145 .04637 .14363	107	85,990	19,14930	6.77160	.18690	.13096	1,48580	.01860
93,950 10,12230 2,94460 20060 .15580 3,34370 97,930 10,03340 2,02300 .0136022520 2,86180 99,830 9,92200 1,4213009510 1,69680 4,29970 89,950 10,12040 4,42650 .24850 .34170 2,84760 64ADIENT018344558800145 .04637 .14363	491	69.950	15,24369	4.55180	.24935	.33710	2.86740	99419
95.930 10.03340 2.02300 .0136922520 2.86189 99.830 9.92200 1.4213009510 1.69680 4.29970 89.955 10.12540 4.42650 .24859 .34170 2.84769 66ADIENT018344558800145 .04637 .14363	100	93,950	19,12239	2.94465	.25869	.15580	3,34379	.01890
99,830 9,92200 1,42130 -,09510 1,69680 4,29970 89,955 10,12540 4,42650 ,24850 ,34170 2,84760 66ADIENT -,01834 -,45588 -,00145 ,04637 ,14363	167	97,930	19,03349	2,02300	.01369	-,22529	2,86189	.01440
89,955 10,12540 4,42650 .24859 .34170 2,84769 GRADIENT018344558800145 .04637 .14363		99.830	9,92260	1.42130	-, 09510	1.69680	4.29970	-, 12390
GRADIENT 5183445588 55145 . 54637 .14363	107	89,955	10,12545	4,42650	.24850	.34170	2.84769	. 55495
		<b>GRACIENT</b>	51834	-,45588	-,00145	. 94637	.14363	00366

HVV	AH PHA		¥ J	ð	CYN	CYNM	g G
40	565.08		10.88940	17710	. 08050	1.62009	.00190
50	82.240		10,15130	.19130	.13480	1.61535	.01269
50.0	86.179	11.63100	7,92169	.25989	.14979	1.65685	00370
*	99.970		5,02759	.36639	.22510	2,27620	. 01690
5	94.030		3,13130	.43779	.23250	1.94960	.00690
	97.985		1.73759	.25950	.14979	2,47370	.00900
	99.670		1.49550	.11910	.11550	2,41705	.01399
595	95.070		5,21620	.36130	.29569	2,20630	. 01269
	CPACIENT		51225	.05201	. 95216	. 54652	. 50035

				TABLEAUTE !	# 17 P. C. A. C. A.				(21817)	C. JON 10 ) (2)	
			T.		MSP( SYB(SAILP) 142-IN SAO (133) NULL	1653) Mari					· } .
REFER	ERENCE DATA	_							PARAMETRIC DATA	: DATA	
.583.	54. IN	XMRP		5.5579 IN.				BETA =	600.	PHI =	000
= <b>. 6</b> 056	3 IN.	Aide		.0959 IN.				ATHENG ::	8 6		000
659	o In.	1 × 1		. WI GGGG					1.900	SHOSTK =	. 609
¥ 1				•				# E	3.000	# **	4.100
		RUM NO.	). 250/ O	O RN/L =	5.43 GR	GRADIENT INTERVAL = -5.60/ 5.00	RVAL = -5.	00/ 5.00			
	1741	3	77	2	¥	5	E.J	CYPH	5		
	Ī			111,19620	11.49180	.02520	01640	52440	00190		
	104.	5 6		200111	11.71120	-,00340	.31970	46410	.01450		
				01205-11	9.80850	0000	.22150	-1.63990	.04429		
	•			11.50030	7.09750	14710	.16960	-1.18620	00490		
	•		02.970	11.58890	4.49170	.22979	-,24670	.76480	-, 00900		
			97.950	11.29500	2.75120	.15349	29320	.64659	-, 03599		
	•	167	99.850	11.25940	2,72830	.03979	44300	.47220	. 00280	•	
	•		89.990	11.42750	6.99370	.16589	.17640	-1.31320	. 54215		
	:	_	GRADIENT	95235	50887	.09646	03110	.08907	00148		
		2	RUN NO. 251/ 0	D RN/L =	8.61 GR	GRADIENT IHTERVAL = -5.00/ 5.00	RVAL = -5.	00/ 5.00			
	1	,	710017	3	3	5	A.	CYN	ಕ		
	É		20.390	12,35450	11.49660	.11510	47420	.04370	01530		
	•		25.260	12.29670	10,61260	.,5580	07330	24839	01700		
	. •	3	66.180	12,42590	8,53529	.23549	05680	81670	.02190		
		9	90.120	12,56460	6.37500	.31870	-,18759	91910	.09540		
		9	94.060	12,58630	4.12500	.45610	08795	68079	00109		
		90	96.920	12,28270	2.93265	.34150	35350	44229	.01130		
		ğ	99.910	12,75920	2.70299	.19540	53670	50250	.00590		
		3	90,120	12.96129	6.16399	.29160	19210	04939	.01250		
	•	-	CRADIENT	.01294	47115	.00902	99855	01627	<b>96000</b> .		

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SATE 19 AUG 74	EFERENCE D	TABULATED 8 MSFC 578	TABULATED SOURCE CATA, MSFC TUT 578 MSFC 578(SA19F) 142-IN SRB (139) NB 5.5575 IN.	NBULATED SOURCE DATA, MSFC TUT 578 MSFC 578 (SA15F) 142-IN SRB (139) NBE1 GRIT 5,5575 IN.	<b>e.</b>	(R91R21) ARAMETRIC DATA .000 PHI	( 01 H	PAGE 800 73	96
LREF = BREF = SCALE =	.0000 IN. YMRP = .0000 IN. ZMRP = .0056	.N1 0000.	<u>:</u> :		ATHRNG = CONFIG = RN = E	1.999	ATHS = SHDSTK = RN =	•,	.000

T T	AL PHA	Š	E C	5	CYM	CYNH	ខ
498	80.580	11.32976	11.61250	03640	38610	1.43170	. 9265
		11 05640	10 12560	0.020.	08810	.72169	0194
	25.10						707.66
405	85.940	10.90749	6.68329	.20960	11001.	1.39360	
404	89.920	11.22525	4.62659	.29720	.01650	1,49730	. 9229
	000 10	11 16480	7 42490	37740	.23450	2.04640	0418
	30.00			2 1 2 2	02240	A 0.050	1361
403	97.910	10.93289	1.33380	.1/96.		777	
404	99.815	10,95629	1.13910	. 93639	.64360	2,78845	02720
404	49 920	11.14920	4.29345	.32249	.07918	1.17635	. 50489
}	GRADIENT	91997	53340	.09614	. 53393	.11336	-, 90273
MOR HOW	•	CA RN/L	4.56 8. 19 8. 19	GRADIENT INTERVAL = CA CYM	CYM = -3.0U/	CYNN	CB L
•	60 170		10.30120	18370	.02570	.75855	.02850
	82.040		9.35720	19360	.01120	.67270	. 9242
	A6.510	12,36860	7.68860	.24660	18789	1.17899	0036
d	89.995		6.25199	.28220	-,11660	.19325	.0546
4	94.970		4.99799	.38660	05240	.87630	. 6392
	97 947		1.98235	30060	.02750	1.27750	.0214
	054 06		1.12840	18080	. 54235	1.25469	. 5285
9	90.00		6,13240	.27590	10730	.35849	.0225

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#### MSFC 578 (SAIDF) 142-IN SRB (159) MBE1

(R91422) ( 91 NOV 73 )

	.000
DATA	PNI E AFTSTK E ATMS = SMOSTK E
PARAMETRIC	. 900 900 1. 900 5. 406
	BETA E FUBSTR = ATHRNG = CONFIG = RN
	5.5570 IM. .0000 IM. .0000 IM.
	# # # # # # # # # # # # # # # # # # #
REFERENCE BATA	M1 .88 860. M1 .000. M1 .000.
	867 : LRC : SRC : SCALE :

### RUN NO. 243/ 0 RM/L = 2.98 GRADIENT INTERVAL = -5.00/ 5.00

. 06780 - 05170 - 07340 - 04570 - 01000 - 01620 - 01300 - 01940
CYNN .449E0 12310 39610 2.13970 93150 66130 51260
15540 27400 2660 20500 26350 04220 2560
CA07750129000925025150170001700009540055005500549
CLMM 13.5170 13.5560 9.74530 7.65160 5.05920 3.43760 7.75200 7.75200
COM 12,29440 11,29510 11,60790 11,99390 12,01910 12,06410 -,01004
ALPHA 80.120 81.990 85.960 89.950 97.930 99.950 89.950
. 405 . 405 . 405 . 405 . 405 . 405

### RUN NO. 248/ 0 RN/L = 4.07 GRADIENT INTERVAL = -5.00/ 5.00

C6L 02170 0170 0150 .0350 .04770 .02720 .03770
CYNN 30290 37510 43540 -1.06490 10570 .38990 .40830 82260
CTM 35750 56720 40600 15150 34160 34160 15890 21719
CA .00990 .2020 .2020 .2020 .2020 .4560 .36940 .23120 .27640
CLMM 11.93960 11.00570 12.00570 7.33700 5.10480 5.10480 7.44360 7.44360
CNH [E.97070 1 [E.75290 1] [E.75150 1] [S.25490 1] [E.91290 1] [E.91290 1] [E.91290 1] [E.91290 1] [E.91290 1]
ALPHA 80.200 1 82.070 1 90.010 1 91.960 1 91.960 1 91.010 1
1996 1996 1996 1996 1996 1996 1996

CATE 19 AUG 74

			3	MEE STRICKLINE 142-IN SEB (139) NBEL TVC	142-IN SE	1139) NBE1	TVC S		(891001)	1) ( 01 NOV 73	. 22	
		CE DATA	•					_	PARAWETRIC DATA	DATA		
100	.5255 54.	IN XMR	#	5.5579 IN.				BETÀ =	.000		000.	
1	. #555 IN.	•	**	. 5555 IN.				FUESTK =	. 000	AF 151K =	9 6	
1 100	. 6555 IN.		10	.0000 IN.				ATHENG =	661.	ATHS =	000	
SCALE =	. 2556								200			
		5	RUN NO. 195/ 5	D RN/L =	4.96 68/	GRADIENT INTERVAL =		-5.00/ 5.00				
		3	An PMA	3	£ 10	5	Z.	CYNH	ម			
			50.390	8.08920	6.44100	39880	-,49590	-2.04580	.01090			
			52.210	8,68830	9.92840	.31949	-,37670	-3,52245	. 02500			
		9	56.740	9.76299	11.58440	.12360	-,16539	-2.42469	. 92740			
		105	60.275	11,34260	12,92770	03279	-,14410	-1.20520	.05030			
			64.399	11.92360	13,49050	18869	.96299	.88739	. 50730			
			58. NS	12,21340	13.20629	26760	43360	04550	62519			
		292	70.250	12.43220	13.58480	31210	14140	47769	.04870			
		808	69.270	11.39529	12.85965	03960	13430	-1.06895	.00580			
			GRADIENT	.21842	.23155	-, 93658	.01133	.14753	-, 65519			
		2	RUN NO. 189/ 0	7 G RN/L =	6.62 GR	GRADIENT INTERVAL = -5.05/ 5.00	RVAL = -5.	00' \$ '00				
		7	4: 844	3	¥	ಶ	H.	CAR	9			
		196	50.690	14.03590	12.64510	.9692	24300	25040	-, 05660			
		1.196	52.600	14.67020	13,46349	.93129	24350	-,34480	.02110			
		1.196	56,659	15.91400	14.69190	.07610	27430	-,33000	.02060			
		1.196	60.670	17.00190	14.92779	.82880	39080	-,35670	. 00290			
		1.196	D69.49	17.84110	14.60955	.76640	22850	22290	00260			
		1.196	66.670	18.57440	14.36119	.68779	-,22439	20410	.01170			
		1.196	79,549	18.63650	13.63820	.65820	24130	24300	. 90170			
		1.196	69.669	16.96600	14.75269	. 85869	30195	33250	00139			
		) ) )	GRADIENT	.24216	.04386	01539	.0009	.00455	95024			

CBL - .02530 - .00660 - .00660 - .00960 - .00960 - .00310 - .01336 - .01336 - .01326 - .00531

CYNM
-.08610
-.05250
-.07640
-.05930
-.09800
-.13660
-.07415
-.05350

CTM -.30270 -.34169 -.35700 -.35701 -.35765 -.35665 -.35665

CA 1.32590 1.31210 1.28100 1.12920 1.03380 .95789 1.21090

CLNM 7,74630 8,51935 6,71060 8,95659 9,33110 10,51939 10,20090 6,29419 1,15044

CNN 15.75220 14.28420 15.49680 17.47340 14.47340 18.67310 16.25480 26507

ALPHA 50.510 52.420 56.460 60.480 64.529 68.580 70.460 60.449

MACH 1.945 1.945 1.945 1.945 1.945 1.945

7.13 GRADIENT INTERVAL = -5.05/ 5.00

RN/L =

0

RUN NO. 139/

PAGE 39	( 81 NOW 19 ) (100183)	PARANETRIC DATA	.000 FMI = .000 .006 AFTSTK = .000 .100 ATMS = .000 7.000 SMOSTK = .000		-	02556	01660	01820	91690	52795	01720	01220	01050	.00003
		PAG	BETA = Fudstk = ATHRNG = COFTG =	-5.0	Cytem	14040	14890	15960	17040	10630	16650	-, 17648	16550	00169
SFC TUT 578	MSFC 578(SA19F) 142-IN SRB (139) MBE1 TWC 8			GRADIENT INTERVAL =	5	_	1.43960	1.41420	1.39130	1.25495	1.09920	1.03290	1,36755	92664
TABULATED SOURCE DATA, NSFC TUT 570	578 (SA19F) 142-IN		5.5576 IN. .9090 IN. .0990 IN.	RM/L = 7.07										.24962 .22156
TABULAT	MSFC	ATA		RUN NO. 116/ 0	AL 774A	1.479 50.300 1	52.220	56.230	60.279	64.349	68.360	70.249	69.260	GRADIENT
04TE 19 AUG 74		REFERENCE DATA	3467 s .5030 Se. In LAGY s .6096 In.	•	•			. •			, •		. •	-

-, 53845 -, 52895 -, 92545 -, 55556 -.03180 -.03540 -.03260 -.03560 -. 52985 CYNH -.04090 -.05410 .04640 .06510 -.0510 -.05010 .19540 6.96 GRADIENT INTERVAL = -5.00/ 5.00 7.51720 6.61909 6.16769 6.99939 CLNM 9.14780 8.92419 6.56590 8.15620 19.88980 19.82140 19.55830 19.33250 19.65539 19.69000 19.91600 19.43630 -. 91278 RUN NO. 129/ U RN/L ij 95.339 94.350 94.350 98.269 109.140 90.319 66ADIENT ALPHA 80.460 82.350 3 5 5 5 5 6 5 5 1.963

.00171

19.93169 19.77650 19.32070

20.01550

.02124

SEAD LENT

FA6E 101	(R910F1) ( 81 NOV 75 )	PARAMETRIC DATA	.000 AFTSTK # .000 .150 ATMS # .000 7.000 SMOSTK # .000		CBL 04500 04910 0450 08620 05830 05030
			PLUSTE = ATHRMS = CONFIG =	00' 8'00	- 23590 - 22763 - 15849 - 15829 - 17829 - 17829 - 17829 - 16840
	1 TVC S			RVAL = -5.	
MSFC TAT 578	8 (139) MBE1 TWC			GRADIENT INTERVAL = -5.00/ 5.00	CA .71920 .65460 .51310 .35780 .17350 .09679 .35730
DATA, MSF	142-1H SE			7.04 GR	CLM 6.91710 6.66670 6.36530 7.93410 7.14340 6.38250 5.38250 5.38250 7.32890 7.32890 7.32890
TABULATED SOURCE BATA,	NSC 378 (SA19F) 142-IN 388		5.5576 IN. .0550 IN. .0656 IN.	D RNA =	CON 19.10010 19.24010 19.5910 19.5910 19.512679 19.512679 19.512679 19.5127 19.5127
TABUL	358		H H H	RUM NO. 117/ 0	ALPHA 99.310 82.180 96.170 96.160 96.160 96.160 96.150
		REFERENCE DATA	.5016 54. 14 13467 .4095 14. 7467 .2099 14. 2467	3	8.479 9.479 9.479 9.479 9.479
24 904 61 3140		_			

CATE 19 AUG 74

#### MSFC STRISAIGF) 142-IN SRB (139) NBE1 TVC S

(R915H1) ( 28 NOV 73 )

.5555 58.										
	IN KMRP	**	5.557¢ IN.				BETA =	900.	PHI =	000.
.8555 IN.			.0000 IN.					201.		. 000
.8055 IN.	ZMRP	11	. 8555 IN.					7,000	~	000.
	2	RUN NO. 176/ <sup>[]</sup>	/ O RN/L =	4.99 GR	GRADIENT INTERVAL =		-5.00/ 5.00			
	2	A1 PMA	MA	# T	5	£	CYN	ව්		
	100	129.860	_	-7.70090	-1.62160	-,11080	02490	01880		
	101	127,950		-7.91750	-1,49970	22820	.37140	00800		
	265	123.945	-	-7.97630	-1.25240	-,11580	.61240	55210		
	865	119,930	-	-7,39830	98630	.18110	.55140	02959		
	293	115,920		-6,53849	73150	.68769	2,05890	-, 92619		
		111.918		-6.44050	43520	ີ 5699ມີ	1.27090	-,01329		
	764	110.020		-6.06619	36970	.36885	1.29340	96310		
		119.940		-7,25659	-1.93710	.03520	09699.	51425		
		GRADIENT		09458	96611	04077	57298	09912	•	
			į	3	đ	E.	CYNA	G.		
	HYCH	ALPHA		E	,	22110	40550	05640		
	1.199	129.570		-3.90370	D##CR. 1-	55133		9000		
	1.199	127,669	-	-3,55710	-1.85679	.28739	30110	nenna.		
	1.199	123.650	15.42460	-2.88920	-1.53970	.29720	26990	necen.		
	1.199	119.650	16.36780	-2.16900	-1,31695	.32730	27519	. 50050		
	1.199	115.650	17,23740	-1.25470	97740	.31580	18980	02960.		
	1.199	111.670	-	18330	64350	.27580	08200	06200-		
	1.199	109.790	-	.43149	48890	.25410	00880	00800		
	1.199	119.665		-1.98860	-1.39739	.32840	27470	00830		
		GRADIENT	23789	21485	07270	. 00058	01457	-, 000039		
	2	RUN ND. 144	144/ 0 RN/L =	7.12	GRADIENT INTERVAL =		-5.00/ 5.00			
	3	410	3	2	ಶ	¥.	CYNM	Ę		
	976	ALT 06.	÷	.33410	-1.65480	.26900	.05670	. 92470		
	K # 6	127 420		.62580	-1,77030	.28295	. 04680	.02270		,
		104 100		1.49290	-1.54330	.31200	. 05300	.01230		
	976	119,796		1,83280	-1.22190	.33600	. 62430	.02430		
		115.780	Ī	2,59900	91260	.31690	. 05850	.00949		
		111.750		2.89789	62970	.33238	.04970	.05460		
		109.880	-	3.55160	-,47990	.31649	. 06660	. 00900		
	976			2.17859	-1.19440	.30530	. 58880	. 91229		

			<b>5000</b>		
103	<b>2</b> .		000.		-
PAGE	26 NOV 73				
	•	ATA	PHI AFTSTK ATHS SHDSTK		
	(RS10H1)	21C D			00000000N
	(R)	PARAMETRIC DATA	.000		CBL .02010 .02560 .02560 .01000 .01760 .01760 .01990
		_	BETA = Fubstk = ATHRNG = CONFIG =	00' 8'00	CYNM .07840 .07080 .02970 .04370 .03190 .02640
	176 \$			1.4L = -5.	CYM .26140 .27900 .28160 .28510 .28550 .29720 .28340
C 1M 578	MSFC 578 (SAIGF) 142-IN SRB (139) NBE1 TVC			GRADIENT INTERVAL = -5.00/ 5.00	CA -1.99240 -1.64340 -1.19830 69210 41960 -1.19200
DATA, MSF	142-1N SI			7.09 6	CLIM 1.09340 1.25350 1.55520 2.07730 2.45030 3.45090 2.05600 11591
TABULATED SOURCE DATA, MSFC TMT 578	578 (SA10F)		5.5570 IN. .0000 IN. .0000 IN.	RN/L =	CNM 11.67370 12.28960 13.49510 14.64600 15.78100 16.72860 17.11520 14.63460
TABULA	MSFC		80 C.	111/0	ALPHA 129.905 127.970 123.975 115.950 111.910 110.035 119.960 119.960
				RUN NO.	ALI 127, 127, 113, 113, 111, 111, 111, 111, 111, 11
		2	XMRP TMRP ZMRP	2	3.479 3.479 3.479 3.479 3.479 3.479 3.479 3.479
		# E	Z		รี ค ค ค ค ค ค ค
		RENCI	ģżż		•
2		REFERENCE BATA	.5030 SQ. .8005 IN. .8000 IN.		
DATE 19 AUG 74			SREF = LREF = BREF = SCALE =		
70			2 2 2 3		

....

\*

LREF SREF

.000

\_.00910 .04910 CBL .04010 .01289 .09430 CYNM -1.57660 -2.31570 -1,15190 .98220 .09610 -.43490 .13248 4.90 GRADIENT INTERVAL = -5.00/ 5.00 -3,23680 -.51560 -.11910 -.10769 CYM -.57620 -.39190 -.5664D -.1009D .09720 CA .40180 .32920 .14730 -.01170 -.15470 -.24229 -.31039 13,43360 13.18470 13.17490 12.84000 .24298 CLMM 8.16370 9.67380 11.20720 12.72660 12.24960 12.49870 11.35770 RN/L = CNM 8.05070 9.98965 .22055 11.99860 8.89195 RUN NO. 191/ U ALPHA 50.290 52.250 56.240 60.270 64.300 66.290 69,279 RADIENT . 593 . 593 . 593 . 593 593

GRADIENT INTERVAL = -5.00/ 5.00 6.63 RN/L = NO. 192/ 0

.04660 .04350 .05230 .05360 CBL .02140 . 03 090 . 04 590 . 04 720 -.03510 -.06810 -.19030 -.07180 .09539 .41260 CYNM .02960 -,31880 -,26520 -,29630 CYH -.30390 -.33146 -.33305 -.37960 -,33989 CA .987<u>0</u>0 .93446 .86160 .82310 .74450 .66119 .64730 .82419 -.01685 CLMM 12.72690 13.25190 14.35790 15.10990 14.63765 14.02570 12.89710 14.86050 13.95870 14.62480 15.92959 18.52810 18.87805 16.82000 .24497 16.88020 17.71430 ₹ 52.590 56.640 69.680 70.516 69.670 ALPHA 55.675 68.650 64.685 GRADIENT 1.198 1.198 1.198 1.198 1.198 1.198

GRADIENT INTERVAL = -5.00/ 5.00 7.15 RN/L = RUN NC. 145/

7,47	AH DHA		¥	ð	CYK	CYNM	JB)
E .		13 96.60	7 77340	1.33500	33420	04620	02050
1.933	20.310	13.00.00					0.100
4 040	52.420	14.37759	6.00789	1.30800	-,33400	91540	. 02240
7			40000	01030	35520	91466	. 91620
1.939	56.460	15.55/50	0.16133	7.000			
919	69.489	16.63430	9.08700	1.21289	36390	03039	nacon.
	7.5	17 EUEEN	9 46740	1,11720	37859	-, 00830	.01809
1.404	04.360	00000		04470	DEGAT	חשצטיי	01250
1.939	68.585	18,71630	19.56379	reoin'i			
1,939	79,460	16.87350	10.25740	.94950	-,36740	. 04409	. 92,789
910	69.449	16.31680	8.31060	1,19740	-,33680	. 03360	. 95749
	GRADIENT	.25797	.13251	51867	99196	.00191	.60120

, MSFC TUT 578
TABULATED SOURCE DATA, MS
DATE 19 AUG 74

PAGE 105

(R91ED1) ( 01 NOV 73 )	PARAKETRIC DATA
MSFC 578(SAIDF) 142-IM SRB (139) MBE1 TVC S	
	REFERENCE DATA

45.000 .000 .000

PHI = AFTSTK = ATHS = SHOSTK =

.000

BETA = FADSTK = ATHRNG = CONFIG =

5.5570 IN. .0000 IN.

XMRP = ZMRP =

. 5938 Se. IN . 6958 IN. . 6988 IN.

SAEF = LREF = BREF = SCALE =

RUN NO. 115/ 0 RN/L = 7.08 GRADIENT INTERVAL = -5.00/ 5.00

777	An PMA	2	¥ 10	5	CYR	T A	5
	40 400	14 STOKE	4.65740	1.42810	-,30590	91470	01740
	3000			19710	10570	00000	01260
5.479	25.190	13.35000	3.11.30	7.467.10			
47.	56.230	14.68040	6.30300	1,40370	29240	09290	01950
	60.260	15.66370	7.24740	1.35159	30940	98720	01229
		16 61160	10420	1.23470	29610	-, 59689	-, 00899
3.473	24.310	10.0110	0.13460			67070	014.00
3.479	66.330	17.46770	8.79500	1.09750	nc/62*-	01940	01.50
479	70.240	17,84119	6.96310	1.02210	-,28710	.00619	. 99789
7.7	60.260	15.75699	7,32349	1,35130	28900	96970	-, 09260
	1010101	27176	22240	LEGARA	99000	55160	.09671

(R91EF1) ( 01 NOV 73 )

#### MSFC 578 (SA10F) 142-IN SQB (139) NBE1 TVC S

PARAMETRIC DATA	.005 AFTSTK = .000 .005 AFTSTK = .000 .100 ATHS = .000 7.000 SMOSTK = .600
PAR	BETA : FWDSTK : ATHRNG : CONFIG :
	5.5570 EN. .0000 . .NI 0000 .
	TARP II
REFERENCE DATA	.5050 58. IN X .8050 IN. Y .8050 IN. Z
	94EF = 14EF = 5ALF =

# RUN NO. 186/ G RN/L = 4.98 GRADIENT INTERVAL = -5.00/ 5.00

777	At PHA	Š	E C	<b>5</b>	Y.	CYNM	GB.
101	20.08	12,15570	8.69130	.04640	27580	1.58970	.02410
	20.00	02620.21	7,56420	12349	-,32929	1.78449	. 02615
103	25.00	12,22330	5,19160	.24900	08350	1.23070	. 00950
	80.057	12.39859	3,08999	.34770	11045	1.42439	. 03990
404	93.940	12,38225	1.43779	.46550	01669	1.35810	. 03110
487	97.910	12.39425	06860.	.49950	.08110	1,48190	.00185
597	000-66	12,24380	50959	.30510	.20810	1,43110	.01299
198	89,950	12,35560	3.11390	.33610	56940	1.31490	00910
	GRADIENT	.01139	46723	.01597	.02337	00983	00064

# RUN NO. 185/ 0 RN/L = 6.76 GRADIENT INTERVAL = -5.00/ 5.00

MACH	AI PHA		E	ð	CYR	CYNH	ಕ
901	80.429		9.52370	.60940	46530	.36480	.00940
661-1	0.00		9,18450	.57850	46950	39930	.01380
601.1	AK 270		8.37420	.48959	-,46760	.49260	.00980
	000 00		6.96290	.36220	-,46640	.58240	.01670
661.1	94 240		6.31550	.16740	46739	.76490	-, 09940
667.1	9A 210		6.23240	-,00330	41995	.64320	.01930
661.1	100.001		5.84890	09260	39155	.56500	.09970
1.199	90.220	19.98620	6.92990	.35960	47590	. 56225	.00610
	GRADIENT		19279	03614	.05320	. 51419	.00002

# RUN ND. 121/ 0 RN/L = 6.98 GRADIENT INTERVAL = -5.09/ 5.50

MACH	ALPHA	3	<b>E</b>	ฮ	C	CYNM	පි
3	80.450	19,62070	9.01980	.66670	-,42310	.12230	01730
1 96.1	82.340	19.76379	8.85390	.60279	42189	.15620	00430
1.963	86.320	19.92220	6,36030	.45830	42270	.23850	61960
1.963	90,290	20.01650	7,75740	.39769	42176	.27279	03080
196	94.290	19.87600	7,15529	.13670	-,49139	.33549	93009
1.963	98,250	19,58460	6.31120	94150	-,36565	.23300	00459
1.963	100,130	19,37450	5.91600	-,13680	35375	.39170	.00419
1.963	90.290	19.95489	7,72780	.30389	41719	.29599	01139
	GRADIENT	51144	15894	04565	.00357	. 60779	.00038

DATE 19 AUG 74	TABLEATED SOURCE DATA, MSFC TUT 576		PAGE 10
	MSFC 578 (SAIDF) 142-IN SRB (139) NBE1 TVC S	(R91EF1)	(R91EF1) ( 01 NOV 73

9.5570 IN. 56.000 PH = 45.000 PH = 45.000 .0000 IN. 50000 IN. 500000 IN. 50000 IN. 500
PARAMETRIC DATA  SETA = .000 PHI = FLOSTK = .000 AFTSTK = ATHENG = .100 ATHS = CONFIG = 7.000 SHOSTK =
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ARAMETRIC DATA .000 PHI = 45.000 .000 AFTSTK = .000 .100 ATHS = .000 7.000 SHOSTK = .000
DATA PHI = 45.000 AFTSTK = .000 ATHS = .000
48,000

2							
777	A1 944	3		5	ž	CYN	<b>ઇ</b>
	89.316	19.07650	0.68600	.71560	40890	.01050	.00000
	201	19.25160	8.73770	.65159	41770	.04958	. 00000
	96.130	10 45070	A. 28436	50410	-,39320	. 96540	.00000
		10 62190	7.89310	.34049	-,39730	.12550	. 00000
	7 7 7 6	19 51920	6.98748	.15629	-,37719	.19430	.00000
	200	10 24560	6.21800	81719	-,35650	.19250	.00000
		10 00076	5.81450	03660	-,34249	.23030	.00000
3.479	96.169	19,62350	7,83320	.34280	37990	.16269	. 66559
	CPACIENT	-, 95145	15736	94178	. 96342	.01062	. 00569

(R91EH1) ( 28 NOV 73 )

	45.000 .000 .000
¥	PHI = AFTSTK = ATHS = SHDSTK =
C 0A1	
PARAMETRIC DATA	.000 .000 .100 7.000
_	# # # # # # # #
	BETA Fudstk AthrnG ConFIG
	* 5.5570 IN
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DATA	<u>z</u>
REFERENCE DATA	.8999 SQ. IN8290 IN8590 IN
	SAEF = LREF = BREF = SCALE =

5.00
-5.00/
**
INTERVAL
GRADIENT
5.00
**
RNZ
ø
179/
Š.
2

			.95750 .60146						
			. 25080						
			-1,22660						
			-8.69989						
3	7 90420	35050	9.41510	10 48849	11 26600	11 81890	11.93800	10.41150	24000
410	ALTIA	129.040	124 420	20000	מוני שויי	100	060-111	119.925	100000
	MACH	666		160		666.	. 293		cer.

# RUN NO. 189/ D RN/L = 6.74 GRADIENT INTERVAL = -5.00/ 5.05

-3.87770 -1.96150 -3.52140 -1.83365 -2.85250 -1.56530 -2.10150 -1.33140 -1.3569098640 -0066051540 -1.91600 -1.32170

#### 7.12 GRADIENT INTERVAL = -5.00/ 5.00 RUN NO. 143/ U RN/L =

	41014	3	3	5	CYN	CYNM	J E
MACH	400	01 503 C1	18445	-1.85780	.26530	.11250	. 01750
1.94	163.790	14 26060	51460	-1.77250	.25870	.14040	. 02890
1.947	010.721	20003-51	1.43940	-1.55790	.26260	.24830	.03000
1.46	163.631	15 84730	1.67190	-1.23950	.27369	.26380	. 02679
1.967	201-C11	16 A24A0	2.34949	92530	.27330	.27880	.02469
1.947	113.00	17 03140	2.59648	62255	.25830	35690	. 53885
1.947	111.75	18.14540	3,30230	48060	.24210	.41439	.03730
. 247	119.820	15.49519	2,16659	-1.26980	.25140	.29770	. 02969
	GRADIENT	26387	14312	-,67191	. 00039	-, 91352	00071

#### TABULATED SOURCE DATA, MSFC TWT 578

FASE 109

(RSIEM1) ( 20 NOV 73 )	PARANETRIC DATA	BETA = .000 FHI = 45.000 FWSTK = .000 AFTSTK = .000 ATHRNG = .100 ATHS = .000 COMFIG = 7.000 SHDSTK = .000
MSFC STRISALIFF) 142-IN SRB (139) NBE1 TVC S		5.5570 IN. .0000 IN.
	REFERENCE DATA	SAEF = .5930 SQ. IN XMRP = LAEF = .0999 IN. TMRP = BAEF = .0599 IN. ZMRP = SCALE = .9996

2	RUM NO. 11	112/ 0	0	RN/L =	7.09	GRADIENT INTER	INTERVAL = -5.06/	10/ 5.00	
7	ANG 14			3	3		CYN	CYN	5
	120 80	. 9	ï	79140	9748		.22490	.22340	.04170
	40.464	9	: :	11170	1,1136		.23860	.23160	.04290
	101		: :	44640	1.46991		19910	.24660	.04990
	163.31	9 5	: :	E6420	2 0342		.22620	.29170	.04440
5.4.4 5.4.4	119.50	2 5		79726	2.5226		.21749	.29695	.04960
	76.611	2 6	: :	71710	10001		.29479	.36220	06050.
7.479	110.03	2 5	: :	17.12440	3.44139	047849	.21615	.35930	.06739
3.479	119.96	g,	=	1.62879	2, 93321		.23030	.29160	.03950
	GRADIENT	=	•	27374	1249		.00000	00725	90979

٠	•
	7
-	

(R91FD1) ( 61 NOV 73 )

C DATA	PHI = 90,000 AFTSTK = .000 ATHS = .000 SHDSTK = .000
ARAMETRIC DATA	.000 .000 .100 7.000
a.	BETA = Fudstk = ATHRNG = CONFIG =
	5.5570 IN. .0000 IN. .0000 IN.
	XMRP :: YMRP :: ZMRP ::
REFERENCE DATA	.5039 SQ. IN X .0095 IN. T .0099 IN. Z
	SAEF = LREF = EREF = SCALE =

5.0
-2.00/
NT INTERVAL =
4.93 GRADIENT
RN/L =
1947 0
RUN NO.

11.69515	
	12.20790 11.33369 .21551

# RUN NO. 1937 G RN/L = 6.64 GRADIENT INTERVAL = -5.00/ 5.00

NA CA	AI PHA	3	4	ð	CYM		<b>5</b>
100	50.660	13.97840	12,56190	.97415	-,27319		.02430
195	52.589	14.63979	13.09230	.91450	29740	16660	.01230
1 195	56.630	15,90670	14,14989	.82789	-,28699		. 02389
461	69.670	16,90270	15.10430	.77275	26829		.02589
195	64.670	17.74890	14,49380	.70039	24150		.03280
***	64.650	18,56695	13,97820	.66040	26675		.04040
561	76.520	14,63800	13.21330	.64190	39599		.04169
1.195	100	16,67490	14,73900	. 78550	29325	ı	. 94360
	GRADIENT	.24350	.04437	01633	56521		. 50121

# RUN NO. 141/ 0 RN/L = 7.14 GRADIENT INTERVAL = -5.00/ 5.00

244	AH4 :4	3	20	ð	T.	CYNH	9
	50.520	13.44060	7,64350	1.30410	28869	22959	01679
3	52.410	14,35070	7,83540	1.26119	29540	21136	61 909
- 943	56.450	15.66640	0.69420	1.25530	31679	21319	51470
	69.479	16.64020	8.95600	1.19410	-,32570	-,29159	92240
	64.520	17,58540	9.31160	1.09749	33070	18729	91229
	64.540	18,73040	10,49660	1.09649	31900	24520	01340
	70.450	14.93050	10.09050	.94570	32310	16649	00280
	69.430	16.35220	6.16369	1.17960	30030	-,13569	01459
	GRADIENT	.25941	.13283	91773	05163	.05120	. 65534

#### KSFC 578 (SA10F) 142-IN SRB (139) NOE1 TVC S

90.000 .000 .000 (R91F01) ( 61 NOV 73 ) PNI E AFTSTK = ATHS = SHÖSTK E PARAMETRIC DATA .090 BETA = FAOSTR = ATHRNG = CONFIG = 5.5576 IN. .5580 IN. REPERENCE DATA .8559 St. IN .8559 IN. .8599 IN.

SCALE :

#### RUH NO. 119/ 0 RN/L = 7.05 GRADIENT INTERVAL = -5.00/ 5.00

7	AH PHA	3		5	CTN	CYNE	៩
	50.308	12.96196	4.74780	1.41420	27650	10750	. 55125
	42.200	13,53469	5.29050	1.40450	22640	17290	. 00169
	66.7.3	14.66935	6.29810	1.38350	26620	23800	.03930
	60.760	15.71296	7, 98239	1.35749	25459	22960	01040
	7	16.69665	8,11439	1.23030	24799	21110	09600.
	25.25	17.48150	8.71250	1.07690	23000	22710	00960
	70.740	17.42655	0.85449	1.01179	24330	21560	06200
: 5	69.760	15,71319	7.09250	1.35570	-,25449	21520	01460
•	CEANIFUT	27776	95470	A0000	95089	05155	00067

MSET TWC S       (R91FF1) ( 01 MOV 73 )         SREF = .5039 S4. IN XMMP I S.5570 IN.       PARAMETRIC DATA         LREF = .5039 S4. IN XMMP I S.5570 IN.       BETA = .000 PHI = 90.000         SREF = .5039 S4. IN XMMP I S.5570 IN.       FLOSIX = .000 PHI = 90.000         BREF = .6039 IN.       ZMRP I S.000 ATHS = .000         SCALE = .0056 IN.       ATHRNG = .100 ATHS = .000         SCALE = .0056

777	AL PMA	3	CL.884	5	CYN	CYN	ಕ
		12,15930	9.66420	51250	.02460	.16890	.04930
	42.069	12,15940	6.61149	. 57610	-, 99369	.45820	. 91070
		12.35530	5,37410	.28890	.04850	.43835	-, 09840
46.		19.49140	3.28119	41490	.33450	. 59225	-, 65669
666	200.00	12.42160	1.68169	47589	.29100	. 50525	-, 05649
	97.940	12.44340	26310	.42795	.34175	.46470	. 02940
		12.49670	64399	32655	.49960	.55975	. 02739
	89.950	12.44729	3,24729	.42640	.26229	.04290	-, 09340
	COANTENT	A15.10	52009	.01956	. 92111	.00518	59516

3	RUN NO. 1	104/0		RNA E	6.74	CRADIENT IN	INTERVAL = -5.	-5.00/ 5.00	
2	1	4	Ü	Ī	¥ o			Cyre	ਵੱ
	9	Ç	5	46120	9.8301			19710	00150
		5	-	95540	9.4697			17270	00630
77.	3	9	2	84330	0.6459			54720	-, 00100
661.1	:			47710	7.1665			09790	-, 96728
	7		2	03000	6.6929	05.20930	29799	55295	. 00900
		5	=	91750	6.5481			-, 59895	-, 09539
	1001	8	2	70540	6.0377			11370	.02170
	90.2	5	5	92465	7.1401			01630	.05569
	GRADIENT	×	•	. 01664	19168			. 05448	.00079

RUM NO.		122/ 0 RM/L	2 96.9 "	GRADIENT INTERVAL	RVAL = -5.09/	007 2.00	
77	A1 P.16A			5	CTN	CYNH	ಕ
	80.450			.65370	35700	16300	0313
				26965	34650	16270	0284
				.46430	34239	-, 15719	0257
				31550	33250	12465	9332
				14480	30430	11129	0338
	25.00			03679	-,24990	97695	5164
	100.130			13139	27610	56710	0266
	99.300	19.09170	7.69099	31220	32935	11189	03600
	GEAD I ENT			03948	. 96492	. 99454	. 0502

(

(R91FF1) ( 81 NOV 73 )

#### TABULATED SOURCE DATA, MSFC TUT 578

HSFC 578(SA19F) 142-IN SRB (139) MBE1 TVC S

	000.	
DATA:	PHI AFTSTK : ATHS : SMOSTK :	
PARAMETRIC DATA	.000	
	BETA = FLOSTK = ATMRNG = CONFIG =	-5.00/ 5.00
		RIM NO. 114/ 0 RN/L = 7.04 GADIENT INTERVAL = -5.00/ 5.00
		7.04
	5.5570 IN. .0000 IN. .0050 IN.	RN/L =
		114/ 0
Į.	7146 7146 7146 7146 7146	10. 10.
REFERENCE BATA	. 5939 Se. IN. . 6999 IN. . 6999 IN.	
	\$400 : 1400 : 1400 :	

ñ	
-5.00/	
INTERVAL =	
CAADIENT	
7.2	
RNAL #	
114/ 0	
RUM NO.	

- 27850 - 27850 - 27800 - 27800 - 28670 - 29860 - 28870	1
CA .70040 .64920 .39710 .1635016179	:
CLMM 8.77750 8.6419 8.19450 7.79910 7.03340 6.21680 5.82370 7.03340	
CNM 19. 06960 19. 25526 19. 44570 19. 49590 19. 21369 16. 96499	-, 02323
ALPHA 80.316 82.316 86.336 96.370 96.356 96.356 96.356	<b>CRADIENT</b>
5.479 5.479 5.479 5.479 5.479 5.479	7

#### TABULATED SOURCE DATA, MSFC TUT 578

FAGE 114

20.02 000 000. (R91FH1) ( 26 NOV 73 ) PHI = AFTSTK = ATHS = SHOSTK = PARAMETRIC DATA 986 BETA = FUDSTK = ATHRNG = CONFIG = MSFC STAISAISF) 142-IN SRB (139) MBEI TVC S 5.5570 IN. .0500 IN. .0509 IN. REFERENCE DATA . 2956 58. IN . 2999 IN. . 2996 IN. 2001C : 3001C : 1000C : 3000C : 3000C

# RUN NO. 192/ G RW/L = 5.82 GRADIENT INTERVAL = -5.50/ 5.30

COL00130 00160 00760 00760 00300 00300
CYM -1.13340 -1.326905968075660 1.60990 3.439046560
CYM 046EG 593EG 5773G 1427G 7722EG 4161G 61951
65050 -1.525050 -1.525050 -1.24760 41290 -1.03530 06696
CLMM -7.88116 -1.1180 -1.01890 -7.69909 -7.69909 -6.69310 -7.34930 -7.34930
CMM 7. 84820 10. 48220 10. 48220 11. 11. 15. 11. 11. 11. 11. 11. 11. 11.
MPM 125.856 125.856 115.956 111.056 11
Ž

#### RUN NO. 181/ G RN/L = 6.74 GRADIENT INTERNAL = -5.00/ 5.00

5	ncein.	.09770	. 02000	.01810	.03240	.01459	. 61290	.03460	05020
Cylen	02169	-, 58860	37750	39940	30930	22100	19369	39830	02176
CT	00226	.33779	.34210	34270	.31630	.30379	.31300	09258*	.0012
<b>5</b>	-1.95750	-1.62940	-1.55940	-1.33010	94270	65569	50290	-1.32579	67331
CLM	-3.05250	-3.51069	-2.82176	-2,96960	-1.26030	36549	.16205	-1.95500	-,29996
5	15.56350	14.25320	15.49000	16.45590	17.31150	18.12510	18,43599	16,39560	24229
ALPHA	125.579	127.660	125.650	119.660	115.669	111.660	100.779	119.660	COADIENT
MACH	1.197	1-107	101	1.107	1.197	1.197	1.107	1.197	

# ALM NO. 142/ G RN/L = 7.12 GRADIENT INTERVAL = -5.00/ 5.00

MACH	AL PHA	3	T.		CTR	CTE	ಕ
	124.710	12,67660	17860	٠	35280	19310	.01850
	127.790	13.25100	15690	-	.35430	25470	.02750
	123,746	14.65140	1.12690	-	.36599	06850	. 00660
	119.780	15.63160	1.61779		.36370	04319	. 90669
	115.765	16.75880	2.37999		.33649	. 02140	. 00510
4	730	17,93879	2.51510		35200	. 02820	.01779
470	100.465	14.67660	3,14329		.33940	. 02070	.01169
	119.810	15.45049	1.98760	-1.19340	.32560	06660.	99499
•	GRADIENT	27632	14087		. 00073	01214	. 00043

PAGE 115	(RS1FH1) ( 26 NOV 73 )	PARAMETRIC DATA	10 PMI = 90.800 10 AFTSTK = .060 10 ATHS = .009 11 SWOSTK = .000		9		9	5		9	2	2	•	
	£	PARANET	EETA = .000 ALHEME = .100 CONFIG = 7.055	9/ 5.00	Cyan CBL . 02620	•		•			,			
	1 TW S			Gradient interval = -5.00/ 5.00	CYN	20063.	.20050	01062.	08692"	2007	.39450	22429		
MSFC TAT 578	MSFC 578(5A10F) 142-14 5A9 (139) ABE1 TVC 5			AADIENT INTE	CA -2, 61230		•						64AD1ENT 27561 12226 07914 05010	
E DATA, MS	F) 142-14 3			7.0	CLM	1.00215	1.42673	2.01580	2.46440	3.54779	3.34030	2.95680		
FABULATED SOURCE DATA,	FC 578 (5410		5.5576 IN. .0908 IN. .0888 IN.	* 10 RMV *	<b>T</b>									
146	¥				RUN ND. 113/ 0	AL PHAA	127.969	125.970	119.960	115.910	111.916	110.030	119.960	1 1 1 1 1 1 1 1 1
74 95		REFERENCE BATA	. 5236 Se. In	2	RACO	2.4	3.479	8-4-8	8.479	2,479	8.470	2.479	A	
CATE 19 AUG 74			: 274% : 2948 : 1862 : 1863 : 2945											